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THE
NATURE, CAUSES, AND SYMPTOMS
OF
DISEASES
OF THE
LUNGS AND THROAT;
WITH THEIR TREATMENT

BY THE USE OF
COLD MEDICATED INHALATION.

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"When will people learn to *avoid the causes*, and thus escape the consequences, of that dreadful disease, Consumption? When will they understand the absolute necessity of *pure air, free exercise*, and a *healthful diet*, to ward off and prevent a malady which desolates every hearth with its ravages? When will they discover the worse than utter folly of depending upon *drugs* for its prevention and cure?"—AUTHOR.

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P R E F A C E .

THE purpose of this brief work is to lay before the public a concise and clear description of the Diseases of the Lungs and Throat, together with the causes that lead to them, the symptoms by which they are known to exist, and their true and rational mode of treatment. In carrying out this object, the reader will observe that all technicalities have been avoided, as far as was consistent with a correct statement of the facts relating to the anatomy and diseases of those organs. It is believed that the subjects treated of are made plain and intelligible to all; and that much important information, which is now too generally locked up in medical treatises, is thus placed within the reach of the unprofessional reader. The book is designed to be the *Invalid's Guide*.

It will be seen that, with a view to this end, particular attention has been given to the causes of pulmonary diseases, some of which are not yet generally known, or at least not appreciated as their importance deserves. It is the writer's firm conviction that these diseases, now so frequent in their attacks in every community, and numbering

their victims in almost every family, will never be less general or less fatal until the *causes* producing them are better understood, and more systematically and carefully guarded against. Had mankind always lived in accordance with natural laws, disease could never have existed. Medical science and the medical profession are but the necessary results of *disease*. It has come to be considered the business of the physician to dispense the balm of healing to the sick. How much more important, because so much more valuable to the community, that he should instruct in regard to the causes of disease, and the means of avoiding it, and thus aid in lessening the sacrifice of health, time, and life, now so painfully apparent!

Until disease shall be more generally prevented, however, efforts must be made for its cure. It becomes a great duty on the part of the physician to seek for remedies for those diseases which are most prevalent and fatal; and more especially it is his duty to diffuse information regarding any new and unusually successful mode of medical treatment which he may have discovered. This he should do, although the profession in one phalanx should oppose him, and although prejudices among the people meet him at every step. The tendency to adhere to established doctrines, however worthless, is felt as it ever has been; and yet, in this age of manifold new and beautiful discoveries, it must sooner or later give way. The profession and the

people will, it is believed, be willing to inquire into the truth or falsehood of a new principle, and to investigate the virtues and success of a new mode of medical treatment.

If we look around us at the terrible ravages of consumption, or consult the "bills of mortality," we see on every hand the victory of Death, and the hopelessness of the old methods of treatment. No check has hitherto been given to the progress of the destroyer. Lingerer day by day, the unhappy patient has only looked forward to the grave as the end of his sufferings. There has been for him no "balm in Gilead," and no "physician there."

In the application of remedies for the cure of this dreaded disease, it will be seen that I differ entirely from the members of the profession at large. By the treatment I have been led to adopt, *remedial agents are applied directly to the diseased parts*. To control existing disease, to prevent its extension, and to eradicate the seeds of it already sown in the system—these are the objects which my treatment aims to accomplish, and which, from the success that has attended it under my observation, I do not hesitate to affirm it does accomplish.

In presenting this book to the world, I do not claim that it is entirely free from errors. It has been written in the hurry of professional labor, and at such intervals as pressing duties would allow. Yet its pages have been closely

scanned, and its teachings are believed to be correct on all fundamental points. It has been my great aim to awaken the public to a sense of their danger from a class of insidious diseases, and to point out the means of escape from their terrible consequences.

I ask a careful perusal of this volume, and await without fear the verdict that will be passed on its merits. If it shall be the means of relieving the sorrows of a single sufferer, or of sparing one life to the family circle, the highest wish of its author will have been gratified.

NO. 6 BOND STREET, NEW YORK.

ON THE ANATOMY

AND

Physiology of the Lungs.

EVERY living thing requires a constant renewal of air to prolong life. In the creation, man remained an inanimate mass of matter until the Almighty “breathed into his nostrils the *breath of life* ;” and it was only *then* that “he became a living soul !” This “breath of life,” science declares to be the vivifying air by which we are surrounded—the great aërial ocean in the bottom of which we exist, as do fishes in the smaller oceans of water on the earth—and *out of* which we should be out of our medium, and perish even sooner than do the fish when removed from their native element. By inhaling the invisible fluid of this vast ocean the first man received the boon of life ; and only on the same conditions can life be retained by his progeny, so long as the system of nature remains what it is. Vital air, introduced almost unconsciously to ourselves within the mysterious mechanism of our physical being, acts there as the *bent spring* which keeps the wheel of life in motion, and perpetuates the wonderful capabilities of thinking and doing, of emotion and desire !

The Lungs.—In man, the organs which introduce air into the system are the lungs. These are two large, spongy bodies, which, with the heart and the commencement of the larger blood-vessels, fill up the cavity of the *thorax*, or *chest*. These organs are protected against external violence by a framework of bones, consisting of the *ribs*, with the *back-bone* and the *sternum*, or *breast-bone*, to which they are united, the *shoulder-blades* and *collar-bones*. All

these bony structures are connected with each other by *cartilages*, so as to allow of the expansion and contraction of the chest, by which it accommodates itself to the action of the lungs in breathing. The cavity of the chest is separated from that of the *abdomen*, containing the *stomach*, *liver*, and *intestines*, by a strong muscular division called the *diaphragm*, or, in common parlance, the *midriff*. The inside of the chest is lined by a membrane called the *pleura*, another layer of which envelops the lungs, and gives to them that glistening surface which they present in all animals, when removed from the body.

The right lung has three large divisions called *lobes*; the left, two. The size of the lungs varies with the age, capacity of the chest, and often with the health of the person. Their natural color is a pinkish gray, mottled with darker spots. They are not *fixed* in the cavity of the chest, but are *suspended*, each by a large and strong branch of the *trachea*, or *windpipe*, which divides into two behind the breast-bone, and through which the air from the mouth or nostrils is conveyed in the act of breathing into the lungs.

Fig. 1.



EXPLANATION OF THE CUT.—The above figure gives a front view of the lungs and heart, with the trachea and the large blood-vessels about the heart, the whole being represented as the parts exist in their natural position, except

that the anterior edges of the lungs are slightly turned back, in order to afford a better view of the blood-vessels, which lie beneath them. 1 represents the right ventricle of the heart, the left ventricle being behind this; 4, a portion of the left auricle, the right auricle being the loose-appearing structure below the vena cava, which is marked 10; 5, the commencement of the pulmonary or lung artery, which conveys the *venous* blood from the right ventricle to both lungs; 6, the point at which the branch passes off to the right lung; 7, the branch to the left lung; 8, behind this figure the left branch of the trachea (left bronchus) passes in a *downward* direction to the left lung; 9, the aorta, or *great artery*, conveying the *arterial* blood from the left ventricle to all parts of the system; 10, the vena cava descendens, conveying *venous* blood from the head and upper portion of the body, meeting the vena cava ascendens, with the venous blood from the lower part, and emptying into the right auricle; 11, the arteria innominata, or nameless artery, a branch of the aorta; 13, the external vessel is the right jugular vein, leading into 12, the right subclavian vein—the internal, the right carotid artery, going to the head, and a branch of the arteria innominata; 14, 16, the left subclavian vein; 15, the external vessel is the left jugular vein—the internal, the left carotid artery; 17, the trachea, or windpipe, dividing into two large branches just behind 14, one of which passes into each lung; 18, the right branch of the trachea passing horizontally to the right lung; 19, small branches of the left pulmonary artery and veins; 20, 20, the pulmonary veins, two from each lung, conveying the arterial blood from the lungs into the left auricle of the heart; 21, superior lobe of the right lung; 22, middle lobe; 23, inferior lobe; 24, superior lobe of the left lung; 25, inferior lobe.

In breathing, the muscles outside the chest contract, raising the ribs and greatly enlarging the cavity of the thorax. The pressure upon the outer surface of the lungs being thus removed, air rushes into them and expands or swells them so as to fill the enlarged cavity. Immediately afterward the chest-muscles relax, the ribs are allowed to fall again, the cavity is diminished; and the air being thus forced out of the lungs, these organs collapse or shrink to a much smaller compass. This process may be compared with the alternate swelling and shrinking of two large sponges, into which water is alternately soaked, and the next moment squeezed out again.

If we examine the structure of the lungs, we shall understand how it is that these changes in their size take place. We discover that these organs are entirely *passive* in the work of respiration,

having in themselves little, if any, muscular substance. But upon cutting into them we meet with a perfect *honey-comb* structure, which is formed by the *trachea* branching out into innumerable tubes called the *bronchial tubes*, that grow smaller and smaller, like the branches of a tree; and by the numberless clusters of *air-cells* which exist about the sides and extremities of these little tubes, like the clusters of grapes on the twigs of a grape-vine.

The same *mucous membrane* which we see lining the mouth and nostrils, extends downward in a continuous sheet, lining also the windpipe and the smallest bronchial tubes, until the tube itself ceases, and this membrane, which has now become extremely thin and transparent, like the substance of a *soap-bubble*, takes the form of minute bags or bladders, each with at least one opening into a bronchial tube to admit the air: these little bladders are the *air-cells*. Hence, when the lungs expand, it is because the air finds its way into millions of these air-cells; and when the lungs contract, it is because the falling of the ribs presses a portion of this air out again.

Between and around the air-cells are numerous capillary blood-vessels (called *capillary*, i. e., *hair-like*, from their size) which bring almost the entire blood of the body in every round of the circulation into the lungs, and, it may be said, in *direct contact* with the air; *since the two thin and moist membranes present no obstacle to the free passage of the oxygen of the air into the blood.*

The number of air-cells in the lungs has been computed to be not less than 600,000,000! Under the microscope the diameter of these cells is seen to be from the *one-twentieth* to the *one-hundredth* of an inch. In the lung removed from the body and inflated, some of these cells may be seen lying just under its exterior covering, and in appearance resembling millet seeds or small white beads. Could the separate portions of membrane composing the air-cells of a well-developed pair of lungs be connected in one sheet, like a sheet of tissue-paper, the whole surface which they expose to the action of the air would be found to be 20,000 square inches, or *thirty times* the entire outer surface of the body! Thus we have seen that the trachea, starting like an inverted tree from the throat, sends its trunk downward, and dividing, throws its

countless branches to every part of the lungs, studded with millions of bulbs, each of which plays a needful part in maintaining the mysterious processes of life! If one single cell is destroyed, or so filled up with foreign matters as to be rendered useless, just so much of the *life-force* is lost; and it can only be restored by removing the cause of obstruction, or by healthily enlarging other cells, so that they may perform an additional labor, and compensate for the loss incurred.

How complex and beautiful is the mechanism of these wonderful organs! And how admirably do they exhibit the wisdom and skill of the Divine Architect, who has so ingeniously contrived every part of the human body for the offices it is required to perform! Even the bony structure of the chest is exactly adapted to its double office of yielding to the movements of respiration, and yet protecting powerfully the contained organs. In a well-developed body, the cavity within this bony casement is large enough, and only large enough, to accommodate a pair of sound and efficient lungs. How unfortunate, then, the meddlesome spirit of "fashion" and false taste, that by the force of ligatures, and even of pulleys, cramps and compresses the chest, confines and dwarfs the vital organs within it, and thus undermines the very stronghold of life! Such an infringement on the functions of the lungs and heart can never be practiced without producing feebleness, misery and disease, and premature death.

The ordinary capacity of the lungs for air varies much in different individuals. Mr. Hutchinson has shown that there is a connection between the *height* of a person and the capacity of his lungs. Thus, in 172 males under the height of five feet, the average capacity was 220 cubic inches; while of 82 males whose height ranged from five feet eleven inches to six feet, the average capacity was 255 cubic inches. The apparent size of the chest, therefore, is not in all cases a correct criterion of the capacity of the lungs. In common measure, a well-developed pair of lungs in the adult will contain from twelve to sixteen pints of air in ordinary breathing, the quantity in the case of the female being slightly less than in that of the male, but in either being greatly increased by a forcible inspiration.

Each act of *respiration* consists of two parts, the first the drawing-in of the air, termed *inspiration*; the second, the expelling of the air, termed *expiration*. Both these actions must be properly performed, to accomplish the healthy change and purification of the blood. That portion of air which enters or escapes from the lungs is called *breathing air*; the deeper, sighing breath which is sometimes necessary to carry on more completely the change in the blood is called *complementary air*. That which can be forced from the lungs by an unusual effort, is termed *reserve air*; and that which remains in the lungs, and which we can not expel by any effort we may make, is called *residual air*. It will at once appear from the largeness of the cavity of the chest, and from the cellular structure of the lungs, that the latter organs can never be wholly emptied in breathing. And the fact is, that while from twelve to sixteen pints of air ordinarily occupy the lungs, not much more than *one pint* enters and leaves them at each inspiration. It is the *residual air* that buoys up the lungs in water, and causes them to float; and that also contributes materially to the lightness of the human body, enabling a person with a little skill in retaining a due share of air in the lungs, to float upon water. The residual air seldom amounts in healthy lungs to less than 200 cubic inches. Owing to the constant presence of this residue, which is slowly changed during repeated acts of breathing, the purification of the blood in the lungs does not take place by "fits," but is constantly and regularly going on.

The full development and vigorous action of the muscles of the chest, by which respiration is performed, must necessarily be in the highest degree important to the health. If the whole person be sickly and weak, or if artificial methods have been resorted to for the purpose of diminishing the size of the chest (the *waist* being but the lower portion of the chest), the respiratory muscles will of necessity be feeble and perform their office imperfectly. On the other hand, exercise in speaking, singing, or any active employment, especially in the open air, will give strength to these muscles, and, if no mechanical hindrances be interposed, will insure a deep, full, and vigorous respiration. Those who have observed the great size obtained by the arm of the blacksmith and the leg of

the *danseuse*, will understand the power of healthy exercise to increase the development and strength of the muscles.

No one can doubt the importance of the action of the lungs to life and health, when it is recollected that through them, as I shall now proceed to show, must be received the supply of *oxygen*, or vital air, which is to purify and vitalize the blood; and that through them the noxious gases constantly collecting from the breaking-down of worn-out parts of the system must chiefly escape. How carefully, then, ought all to guard against interfering with their action, and against exposures or any agencies whatever that are liable to disease and disorganize these delicate but important structures!

Uses of the Lungs.—In the previous section it was stated that there are two movements of the lungs—expansion and contraction—by which air is received and expelled by those organs. I shall now proceed to state the object of these movements, and the peculiar offices performed by the lungs, the heart, and the air.

The blood which passes from the right side of the heart to the lungs is of a dark color, and is termed *venous*, as it is collected by the veins, and from all parts of the body. The darkness of its color indicates the impurities which it has taken up in its course, and it is for the purpose of being freed from these impurities, and of being again vitalized by the action of the air, that the blood must be sent to the lungs, and that these organs exist. When the blood has left the lungs it has again acquired the bright scarlet, arterial color; and passing to the left side of the heart it is distributed thence to the system at large.

It will be interesting to study for a moment the chemical changes which take place in the blood during its passage through the lungs. The chief constituents of the air we breathe are two gases—*oxygen* and *nitrogen*—the latter forming nearly *four fifths*, the former *one fifth*, of the atmosphere. Both these gases are without smell, taste, or color. Nitrogen will not burn, and though destitute of any noxious properties, it has at the same time no power to support life; so that a person compelled to breathe it in a pure state, would be *negatively* poisoned, *i. e.*,

would die for want of vital air. This vital air is oxygen; which is at once the most powerful supporter of combustion, *and the only mechanical element* among the fifty or sixty in and about our planet *that will support animal life*. Indeed, combustion is in all cases a chemical process, and generally consists in the union of oxygen with the substance burned, *and animal life is but one of the results of this combustion which is constantly going on at a slow rate in all living animal bodies*. Oxygen, entering the blood through the breathing organs, burns up the old and worn-out substance of the body, producing *heat and vital force*; and the products of this burning are then removed by the proper organs from the system, their place to be supplied by the fresh materials taken daily in the form of food.

A red-hot rod of steel plunged in a vessel of oxygen immediately blazes intensely, throwing off a multitude of brilliant sparks; and in a person who breathes this gas pure, the circulation and breathing are excited, heat and activity are increased, and death, if the experiment be persisted in, soon results. Hence the use of the nitrogen of the atmosphere is simply to dilute oxygen, and render it capable of being breathed with safety and with benefit. Hence, our reason would teach us that the atmosphere has its ingredients mixed in just such proportions as to make it compatible with the highest degree of activity and health in the systems of all animals; and that any deviation from the natural proportions of its elements, as is produced by breathing repeatedly the same portion of air, must be directly injurious to the health; and these conclusions are corroborated by the testimony of science. Without oxygen, all animals would immediately cease to exist. Compelled to breathe it pure, they would meet the same fate. But *diluted oxygen*, in just the proportion we find it to form in the free expanse of the air, and just as it came from the hand of the All-wise Author of nature, sustains life in the highest perfection; and that is health.

Carbon, that is, *coal*, forms a large part of human flesh and blood, and especially of the fatty substances of the body, and a large part also of the different varieties of food which we consume. This is proved by the fact that human bodies are *charred* in the fire

as perfectly as wood is; and that *charcoal* may in the same manner be obtained from every species of food. Oxygen, which unites with the carbon in wood or coal to produce fire, unites slowly also with the carbon of the human body and of some parts of our food for a similar purpose, while other portions of the food go to replace the waste in the bodily substance that thus occurs. Oxygen and carbon, uniting in the process of combustion, form *carbonic acid*. This composes a large part of the heated air or smoke rising from every fire; and this forms the smoke of that living furnace—an animal body. It follows, therefore, that in every inspiration oxygen in considerable quantity enters the lungs; and that with each expiration, carbonic acid gas—the result of the burning-up of worn-out material in the body—escapes. This carbonic acid is not chiefly formed in the lungs. The oxygen passing from the air-cells into the blood is conveyed in that fluid to all parts of the system; and wherever it meets with carbon in a state of readiness, chemical union takes place; the carbonic acid formed in all parts is gathered into the blood, and conveyed to the lungs as the natural vent—the chimney—by which it escapes.

The result is, a change in the condition of the blood in the lungs, as already mentioned, from a purple to a bright scarlet color, and from being loaded with impurities, to becoming pure, capable of ministering to the nutrition of all the organs of the body, and of imparting a proper stimulus to the nervous and muscular apparatus. When thus purified it is immediately propelled to all parts of the body through the arteries, which divide and subdivide until they become so minute and so numerous that, as is well known, in the skin even a cambric needle can not be thrust in without wounding one or more of them, and drawing blood. From these small vessels the blood deposits the nutriment that may be needed, and again becoming loaded with impurities and robbed of its vitality, it is hurried off to the lungs for re-purification. No one will fail to perceive that whenever the supply of oxygen is from any cause deficient, or whenever from defective action of the lungs or from other causes the impurities of the blood can not properly be thrown off, disease in some form must be the result. Thus there are *two things* indispensably requisite to healthy blood, and of course to

health of the body, a *sufficient supply of nutritive food, and a free supply of pure air.*

We thus see how beautifully the complicated machinery of the human body is adapted to the accomplishment of the object for which it was designed. And yet how often, by erroneous habits of living, we throw this delicate machinery *out of balance*, producing innumerable diseases to embitter existence, and hurry us "before the time" to that bourne from which there is no return! The follies of youth impair the natural energies, waste the strength, and leave the system an easy prey to whatever causes of disease it may have to encounter. But, more than this, the very air that should minister life and health is sometimes heavy with the seeds of disease; and the food we eat too often conveys into the blood impurities, and even poisons, that undermine the life it was intended to sustain!

For the long catalogue of diseases we have an equally long and startling catalogue of *causes* of disease; and when we look minutely at the delicacy of the structure of our bodily organs, and at the multiplied forms and immense amount of the labor they have to perform, we are led to wonder that their derangements are not more frequent and more fatal in their consequences. At least, we can not fail to learn from the consideration of this subject a lesson of vigilance in regard to our health, and to the action of those influences that tend, during every hour, either to *build up* or to *pull down* this tenement in which we hold our "*lease of life.*"

The act of existence is one of continual destruction; for the death of one becomes the life of another, and the removal of one atom is necessary to the incorporation of another. In the world around us, a re-arrangement of atoms is constantly going on; and the same is true of the world within us. Every word we utter, every action of a muscle, results in the decomposition of some part of the structure that is called into use. The very act of thinking requires the expenditure of nervous power, and to produce this power requires decay of nervous substance. Thus the body literally "wears out" in action; or, since all this decay is produced by oxygen, without the corroding action of which vitality with all its powers would be impossible, we may say with just as much propriety

that, in the fire of its own action, the body is continually *burning away*; while, by virtue of nutrition, it is, during life, continually renewed!

In regard to the effects of respiration on the living economy much has already been stated; but a few additional facts should be mentioned before we proceed. All food is divided into two classes—that which is *nutritious*, or capable of forming flesh, and the *non-nutritious*, or *respiratory* food, which supplies the body with heat. The nutritious elements provide the blood, bone, and muscle with new particles, to take the place of those lost in the action of the organs. In another part of this volume will be found a table of the relative value of different kinds of food, in respect to its nutritive power.

In respect to the respiratory food, it is evident that fire can not be produced without *fuel*, nor will the fuel burn without a supply of *air*; and we have already seen that the same is true in the human body. The conditions of perfect health require, therefore, that the supply of *oxygen* should be just equal to the amount of waste or combustion made necessary by the activity and exposures of the body. But it is impossible, in a work so condensed as this must be, to enter as fully as I would desire into the beautiful workings of every organ; and I shall proceed at once to speak of the effects of a deficient supply of pure air.

Effects of Want of Air.—The elements of the blood, both in health and disease, are well known, and most alterations in its substance or action are easily detected. It may justly be said that the arterial blood is neither more nor less than the body in a liquid state, containing, as it does, the elements of every tissue. It is, as is often declared, "*liquid flesh*." Blood is principally composed of *water*, a substance called *Albumen*, which resembles the white of an egg, and *Fibrin*, which is the principle that "clots" in blood drawn from the vessels. Besides these, a multitude of minute, organized, roundish bodies are found in the blood, called "*globules*," which are of two kinds, *red* and *white*, the former always being abundant in states of vigorous health, and deficient in conditions of feebleness and chronic disease. The blood also contains a small amount of *fatty material*; a quantity of *iron*, mostly found in the red globules; besides *lime*, *common salt*, *potash*, *soda*, minute quantities of *phosphoric* and *sulphuric acids*, and other chemical substances.

In regard to the two principal nutritive elements of the blood, Albumen and Fibrin, no great alteration in their relative proportions can take place without necessarily impairing the health. The first change observed in the blood when not sufficiently purified by the action of the air, is an increase in the amount of water and fibrin, and sometimes also of albumen, with an evident decrease of the red globules—the element most closely connected with vital activity and vigor of constitution. The effects of this change are obvious. They are seen in the bloodless countenance, the shrunken form, flabby muscles, debility, tendency to lingering diseases, often of a scrofulous character, and not unfrequently terminating in pulmonary consumption.

Many of the unpleasant sensations produced by breathing impure air are well known to most persons. Frequenting crowded assemblies, or sleeping in ill-ventilated rooms, produces a feeling of dullness, languor, and nervousness, with headache. It is a common occurrence to hear of death produced by the foul air of wells and vaults, into which workmen too often descend without due precautions; as well as by the confined air of a close room, in which a fire, especially if it be a coal fire, has been burning. But in these cases the same thing occurs, only in greater degree, which takes place in any ill-ventilated room, public or private, in which there is not a sufficiency of fresh air supplied to perfectly meet the wants of those who must breathe it. In these cases an excess of carbonic acid accumulates—a poison so deadly that to inhale it *pure* causes convulsions and immediate death; and to produce this gas, an exhaustion of oxygen takes place, and the result of both these influences is seen in lassitude, and prostration of the bodily energies. If these causes are not present in such a degree as to occasion fatal effects, they still *must* produce results tending to the same end, and always in the same proportion as they are present. The deadly carbonic acid gas, it must be remembered, is thrown off with every act of expiration from each pair of lungs, and from every fire, as a product of combustion.

On the contrary, fresh air, an animal diet, and alcoholic beverages increase the amount of the red globules, and (in case the last two are not indulged in to excess) improve the vigor of the con-

stitution. The jolly red face of the beef-eating Englishman is well known; and his blood is rich in red globules. Out-door exercise, by increasing the amount of respiration, produces—when not carried so far as to *exhaust*—the same good results. But the moment the entrance of a due quantity of pure air into the lungs is prevented, or that carbonic acid is retained within the system in undue amount, that moment an unfavorable change in the blood begins to take place. Statistics and observation alike show that persons whose lives are chiefly passed within door, are far more liable to scrofulous diseases and consumption, and much less robust and healthy, than those who pass a large share of their waking hours in active out-door employments. And yet, among the many who are perfectly aware of these facts, how few there are who draw any practical deduction from them, or who make any practical application of their knowledge in the way of learning the causes of their own diseases, or of securing Nature's aid in their efforts to obtain a cure!

Of the Diseases of the Lungs.

CONSUMPTION:

(*PHTHISIS PULMONALIS.*)

THE reasons which induce me to commence this treatise with the subject of Consumption may be stated in few words. This disease is the most frequently met with of all that afflict the respiratory organs; and it is at the same time the most fearful in its symptoms, and by far the most fatal in its tendencies. To the patient, and not less to the physician, then, the study of the causes, course, and treatment of this disease is a matter of the highest moment; and thus its right to the first place in a work upon pulmonary diseases is sufficiently vindicated by its importance.

The *history* of this baneful disease is the history of a false civilization, and of erroneous habits of living. We have no evidence of its existence in the primitive ages, and our knowledge of the

freedom of the most savage tribes of the present day from this disease, confirms the opinion that it did not then exist to be the terror and the scourge of the family of man. Even the medical records of a few hundred years past show that its frequency was very slight compared with the alarming extent to which its ravages now prevail. When we come to consider the causes that produce this disease, the reasons for its great increase at the present time will readily appear.

What is Consumption?—There are but few who do not understand *something* of this disease; yet *how* it is produced, and *why* it destroys the “house we live in,” is not generally known. This knowledge is important to the patient, that he may learn to *avoid* the disease; and to the physician, that he may properly apply his remedies to cure it.

Fig. 2.



EXPLANATION.—The figure represents the external surface and a section of the lung, studded with tubercles. These appear to have been deposited in the air-cells, and, so far as visible here, they lie chiefly just beneath the pleura, giving to the surface the feeling of being full of *knots* or *kernels*. Many of the air-cells in the interior of the lungs contain tubercles in the same manner; these being interspersed through the entire substance of the portions of the organs in which they are found.

Consumption is known to be caused by a deposit from the blood,

into and around the air-cells of the lungs, of a *soft, cheesy* matter, which is mostly found in the form of small, roundish bodies, in size varying from that of a millet-seed to that of a pea, or larger, and called *tubercles*. But how came this foreign matter in the blood? According to the prevailing belief of physicians, this diseased condition of the blood is the first step in the production of Consumption, or Phthisis, and it is this that, in their opinion, originates the disease in the lungs. They consider the difficulty as *general*, before it is a *local* one. Based upon this theory is the long-established practice of administering medicines by the stomach, in the expectation of cleansing from the blood certain impurities, and in this manner curing a disease that has its seat in the lungs.

It is true that the blood of a consumptive invalid is changed, containing too much water and too few red globules—that it *lacks vitality*. Yet to those who have read the chapter upon the “Uses of the Lungs,” it will hardly be necessary for me to demonstrate, what I claim to be true, that the changes observed in the blood are really the result of a previous change in the air-cells of the lungs, which do not admit enough of *oxygen*, nor properly allow of the escape of *carbon*. The stream, it is true, is impure; but only because the fountain has been troubled. To use a homelier simile, the house is full of smoke, and soot is collecting on the costly fabrics within, only because the draft of the chimney is insufficient.

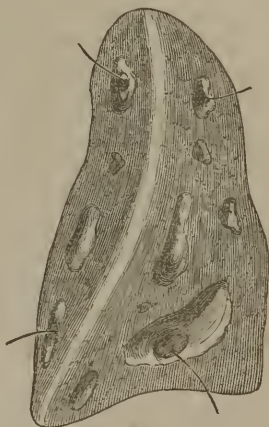
I consider this a very important point to establish, whether consumption be first a general or a local disease, and to ascertain where the causes first act which develop it; for upon the different views held in regard to this point are founded the two opposite methods of medical treatment—remedies *for the blood, through the stomach*, or remedies *directly to the lungs*.

I have said that tubercles deposited in the lungs are the immediate cause of consumption. The deposit takes place into the substance of the lungs or into the air-cells, in either case crowding upon or filling up these cavities and preventing the admission of air. It generally commences at the upper part of the lungs, and more frequently in the *left*, and from this point, in some instances slowly, in others with great rapidity, extends throughout the whole of one, and more commonly of both the organs. The number of

these foreign bodies is sometimes greater, sometimes less, and their appearance and feel is that of *hard, unyielding kernels*, of a whitish or yellowish color, scattered through the soft and pliable substance of the lungs.

These tubercles, when once deposited, undergo certain changes, in some cases occupying but a few weeks or months, in others requiring a period of several years. A few of them soften at first at the center, and inflame the lung around them, forming a small abscess, the matter of which sooner or later makes its way into a bronchial tube of some size, and is then coughed up. If the disease is not now checked, these abscesses enlarge, and new ones are formed by the softening of other tubercular masses. Thus tubercles act to destroy the lungs in the same manner as splinters destroy the flesh—producing at first a slight irritation, then inflammation, and finally ulceration and breaking-down of the parts surrounding them.

Fig. 3.



EXPLANATION.—The figure shows *cavities* of different sizes in the substance of a portion of lung, or, in other words, *abscesses*, formed by the softening of tubercles. The *bristles* introduced into the cavities, pass into bronchial tubes, showing how the former open into the latter, and so discharge the matter, blood, etc., formed in these abscesses, through the windpipe and the mouth, in expectoration. It will be seen that the abscesses eat away the substance of the lungs, in the same manner as an external ulcer destroys the flesh around

it, and thus grow larger until they meet, destroying finally, unless checked, the whole, or a large part, of the lung.

Let us inquire for a moment what must occur after tubercles have become largely deposited, or ulceration has commenced. It is well understood that *vital power* acts to preserve the living solids of the body against the excessive action of oxygen, and so prevents a too rapid destruction of the tissues by that agent. But an extensive deposit of tubercles, or ulceration of the lung, reduces the vital power, and oxygen being no longer duly resisted, seizes upon the blood and the solids. Rapid decay takes place, the breathing is quick, the blood poor and of a florid color, and the patient wastes away. The sedentary workman will acquire consumption by breathing too little pure air; but when the disease is progressing he breathes too much for the vital resistance of his system, and a real *consumption* of his flesh and strength occurs. This is an important point, as bearing on the value of alcholic inhalations and beverages to check the progress of the disease.

Well-authenticated facts are abundant, going to sustain the view here taken of the nature and origin of consumption. An animal kept in confined air exhibits, after a few days, tuberculous or scrofulous deposits, *always in the lungs*, and often in the liver, kidneys, and spleen. Although the most nutritious food be given to animals while undergoing this experiment, the result is the same. The blood becomes filled with impure carbonaceous matters—the unburnt carbon of the food. The lean flesh or muscle wastes, at the same time that the animal becomes fat or bloated. Swine fattened in tight pens, without a due supply of air, invariably exhibit signs of scrofula or tubercles in the lungs or liver.

What we here observe in the lower animals, we see daily exemplified in our own species. In prisons, hospitals, churches, places of amusement, in close or ill-ventilated sleeping apartments, in damp cellars, in merchants' offices—in short, wherever an uninterrupted supply of pure air is impossible or neglected, the *consumptive process* is continually going on. Tuberculous deposit may not take place; it may never take place; but the predisposition is certainly being established, and in a large share of the cases thus exposed to its influence, the actual disease sooner or later develops

itself. The *first great source* of scrofulous or tuberculous disease is still to be found in *insufficient or impure* air.

A majority of those that are consigned to our prisons, are at the time healthy and robust, exhibiting in most instances no signs of scrofula or of tendency to tubercular consumption. Generally leading an active life in the open air, they have laid the foundation for at least a good constitution and long life. Now we have tables showing that by far the greater number of those who die in our prisons, *die of consumption*; and in nearly every instance of death from other diseases, tubercles are found to exist in the lungs and liver! Here we have an effective lesson of the influence of confined and impure air.

In speaking, under the succeeding head, of the causes which produce this disease, we shall show that all the causes yet ascertained, of whatever nature, and acting in whatever way, do affect directly or indirectly the breathing capacity of the lungs, by compressing those organs or diminishing the number of active air-cells, or else that they are such as exclude to a greater or less extent a due supply of fresh air from the pulmonary apparatus.

The Causes of Consumption.

THE causes of consumption are upon the right hand and upon the left; its seeds meet us everywhere, and in almost numberless forms. We are in danger from its poison at every breath—in the ill-ventilated sanctuary, and in the prisoned air of our dwellings.

It is painful to reflect that a disease so deadly in its progress as consumption, should be so stealthy and insidious in its approach. Who knows that he, or she (as it may be), has consumption, until the dry cough, shortness of breath, pains in the chest, or spitting blood reveals the wily foe that has fastened on the vitals? But when these appear, *the work is already half done*; and nothing but the highest skill and the wisest course of treatment, or an effort of the powers of nature, can avert the shaft that, like the sword of Damocles, hangs suspended by a hair over the victim's head!

How little we think of the *unseen* dangers to which, in our variable climate, and with our perverted habits, we are daily liable! Day after day, hour after hour—while we work and while we sleep—while we rejoice and while we grieve—if we breathe an atmosphere robbed of the life-giving element, or are under the influence of any of the causes of consumption, the blood goes on dropping—silently, yet surely—its load of morbid materials into the delicate structure of the lungs. However terrible the “harvest of death” when it comes, *the seed is sown in silence and unsuspected*; and before the victim knows that he is even marked for sacrifice, he is already garlanded for consumption’s altar.

So delusive is this disease, that even when all its symptoms are upon the patient, he still calls his difficulty a “severe cold,” “bronchitis”—any thing but its true name; and in this way thousands cajole themselves into a false security, until all hope is past; when, if they would but confess the truth to themselves in time, their lives might be the reward of their courage and prudence.

Tubercular consumption is either *hereditary* or *acquired*, according as its causes are to be found in transmission from the parents, or in the influence of external or artificial conditions of life.

HEREDITARY CONSUMPTION.

Hereditary transmission of qualities is a fixed law of both the vegetable and animal kingdoms. In the human species we see this law exemplified in physical as well as mental qualities, in the reproduction of health as well as of disease. “Like begets like.” No sane man sows barley expecting to reap wheat, or cultivates thistles in the hope of gathering figs. We do not even hope to raise white violets by setting out blue ones; nor perfect specimens of any vegetable by planting seed that is blighted and sickly. And it is just as contrary to all experience and reason to look for health and longevity in children sprung from parents who are wasted with an exhausting disease.

If the morbid tendency of the parent system be to consumption, the predisposition of the child will be to the same disease; if the former be afflicted with epilepsy, epilepsy will be the inheritance of the latter; and so on through the whole catalogue. It is,

however, an acknowledged fact that consumption is more frequently transmitted than any other malady. And this can not appear strange when we remember the direct influence the lungs must have upon the formation and preservation of a sound constitution.

The fact that consumption is so frequently hereditary has been employed by those who hold that the disease is a *general* one, and dependent on a deranged state of the blood, as the strongest argument in favor of their doctrine. If, therefore, we show that this fact is no argument in favor of the *constitutional* origin of consumption, but rather the contrary, it will not be worth the while to spend time upon the minor proofs brought forward to sustain the same view. Let us see, then, how the case stands.

We have already shown that the lungs are the great fountain of *vital power*, to sustain which requires that, in a healthy adult, the enormous amount of 60 hogsheads of air, and 30 hogsheads of blood should, in every 24 hours, pass through those organs, whose millions of air-cells go on expanding and contracting with the regularity of clock-work. Now if it be true that parents transmit their own physical qualities to their children (and no reflecting mind can or does dispute this truth), then it must follow that if the lungs are the weak or imperfect organs in the parent, they must be weak or imperfect in the offspring. *A well-developed, full chest, and a large, sound pair of lungs never were and never will be found in the son or daughter of parents whose chests were cramped and narrow, and their lungs small, contracted, and deficient in capacity and energy, unless the former have developed their previously imperfect lungs into a comparatively perfect state, by a course of long-continued and judicious exercise. At all events they will never be born with such lungs. But the small and imperfect lungs in the child, by failing to properly purify and vitalize its blood, and by constantly failing to do so, must, if their capacity be not improved by suitable methods, develop in him the same scrofulous or tuberculous tendency which existed in the parent, and, in a majority of cases, eventually the same disease.*

Strictly speaking, then, it is not the attack of consumptive disease that the child inherits, *but the feeble and imperfect lungs that are almost certain to lay in them the foundations of tubercular consumption.*

By a careful reference to statistical tables, and by observation, I find that a consumptive tendency is more frequently traced to the mother than to the father. This is no doubt partly due to the fact that more women than men have the disease, but still more to the direct and powerful influence of the maternal constitution in molding that of the child; the physical condition of the former, from the time of conception until the end of gestation, being faithfully daguerretyped upon the plastic body of her offspring. If the lungs of the mother be loaded, during that period, with tubercles, there is not one chance in ten for the child's escape from the disease; and if the father at the same time has tubercles, it will be as impossible to develop the child into a healthy man or woman, as to raise a healthy plant or a beautiful flower from an imperfect germ.

If one parent, only, shows the consumptive tendency, the predisposition in the child is generally less strongly marked than where both parents are so afflicted. Where tubercles have but just begun to be deposited in the mother's lungs, at the time of gestation, I believe the child's chance of escape is better, especially if a judicious and systematic course be taken to enlarge and strengthen the lungs of the latter, so as to secure purity and vitality to its blood. There are cases where, while certain members of a family die of the disease, others escape entirely. And even in some instances, although both the parents may have died of the disease, the children may escape. The consumptive habit seldom skips, in this way, more than one generation, and where patients tell us that their parents were free from the disease, we shall sometimes discover that its germ, nevertheless, existed in the family, in the testimony that one or more grandparents, uncles, or aunts have died of tubercular consumption.

The Predisposition may be Overcome.—All these facts go to prove that the hereditary tendency to consumption, where it exists, can, in some way, be corrected. What the exact influences are that overcome this tendency, can not, in all cases, be known; but certainly it is reasonable to believe that by an early commencement, and a thorough and judicious following up of a system of physical training, this happy result may the most certainly be se-

eured. Give the child nourishing food, cause him to lead a life of *active pursuits of some kind in the open air*, insist on cleanliness and regular habits, and especially see to it that the chest is largely developed and the respiration full, and beyond a doubt the consumptive tendency will, by these means, often be broken up, and an early *decline* exchanged for a long life of health and usefulness. Farmers know well how to increase the vigor and hardihood of a weak and puny race of domestic animals. Now let them apply exactly the same kind of knowledge, and the same amount of thought, to the physical training of their sons and daughters, and they will certainly *improve a "stock"* in which they ought to take more interest than in "Devonshires" and "Durhams." Carry out such a course universally, and in a few generations the ravages of consumption would be reduced to less than a *tithe* of what they are now.

It does not necessarily follow that because the parents have died of consumption, the children must forever carry the scrofulous taint in their blood. I firmly believe that, although the child may have transmitted to him a consumptive tendency, and even be born with tuberculous matter in his blood, the predisposition can be so eradicated that not a trace or symptom shall ever manifest itself.

There is a mistake often made respecting hereditary transmission of this disease, which has a particularly unfavorable influence upon the mind of the patient. A person who has *acquired* consumption is apt to have more faith in the possibility of a cure, than one who believes the disease to have been *entailed* upon him from his parents. Hope is more strong in the former, and may greatly aid in bringing relief. Now I have often asked patients if one or both their parents had died of this disease, and have been answered in the affirmative; but upon further inquiry I have learned that it was *thirty or forty* years after their birth that the disease in the parents manifested itself. Under such circumstances we have no certain evidence of a hereditary tendency; and if the disease shows itself in the offspring, it is more reasonable to consider it *acquired* than *inherited*. Hence, in these cases, the fears of the patient in regard to the greater incurableness of his disease are groundless.

In conclusion, we have seen that the fact of the hereditary transmission of consumption is no disproof of its being, in all cases, essentially a local disease; since the parent transmits to the child the small or imperfect lungs that in all cases lead to the development of the disease. *A rational practice can never be founded on the antiquated theory, that the blood is the cause of consumption; for the remedy, according to that theory, is directed only to the effect, and not to the cause.* And again; however frequently the disease is transmitted, it is always acquired in the first instance. Let those in whose families the scourge has appeared, then, be ever watchful against its appearance in their own systems; and let even those who come of a stock that has been exempt from the spoiler, be no less watchful, lest they become the first of a long "line" of consumptive victims!

The Right of Consumptives to have Offspring.—The query here arises, Have parents the moral right to entail upon their offspring *consumption* and an *early death*?

I do not ask whether the person who inherits a consumptive tendency, but as yet shows no symptom of the disease, should *marry*; for I claim that the sentiments of home and affection are *too* deeply implanted in our nature, and *too* sacred in themselves, to be made to yield to uncertain questions of prudence. They can not be sacrificed without *moral*, and too often *physical* injury. It is a fact noticed by all observant physicians, that a fondness for the *society of the opposite sex is even stronger in the consumptive than in persons in health—too strong, unless carefully regulated, for the invalid's own benefit*—yet the cravings of an unsatisfied mind are doubtless the most fatal of influences to the constitution of the *susceptible* subject of this disease; and these unfavorable influences should, if possible, be avoided. I have no sympathy with the popular *cant* that would forbid a person predisposed to consumption from marrying. But I would urge on all such the necessity of *great prudence* in the marriage relation.

But the question whether the known inheritor of consumptive tendencies should allow himself or herself the pleasure of offspring, is altogether a different one, and requires a different answer. Who that has the noble generosity of manhood, or the tender instincts

of a true womanly nature, could knowingly consent to be instrumental in bringing into the world children so delicately organized as the consumptive child is apt to be, only to form the keenest attachments for the objects of life, and then be cut down in the prime of manly power and felicity by a lingering and painful disease? Reason and conscience revolt at the consequences of such a step, and the decision of our best judgment, *while it allows the consumptive to marry, FORBIDS his propagating a race doomed to early disease and death.*

If there is any exception to this rule, it is where the tendency to this disease is supposed to be not very strong in the parents, and where they are possessed of the means and intelligence requisite to undertake, systematically, the work of securing a full physical development in their offspring, and so cradling the seeds of the disease, as I have already shown to be possible.

But as it is now, the children of consumptive parents generally *die early*, often soon after birth. And it is well that they should. "A (healthy) child in a house is a well-spring of pleasure;" but it is a most pitiful spectacle to behold a child with that *rich legacy*, consumption, entailed upon it, and to reflect upon its probable brief career of suffering and death. When such are called away, we should rejoice that they have been allowed to quit the scene before they could learn what a supreme mockery life must have been to them!

ACQUIRED CONSUMPTION.

The cause of *hereditary* consumption is beyond the control of the person who may be its subject; the causes of the *acquired* disease may, to a certain extent, be avoided. This class includes *all causes which tend, directly or indirectly, to exclude from the lungs their needful supply of air.*

Impure and Insufficient Air.—This is, as already stated, the great and prolific cause of the disease under consideration. The Almighty, in His wisdom, made the air just as He intended His creatures should breathe it. Our very existence depends every moment on its use. We may live many days without *food*, many hours without *water*, but not *three minutes* without *air*. Now the

supply of air necessary to health may be cut short in many ways, most of which will readily occur to the reader's mind.

Confinement in ill-ventilated rooms, or in rooms where the air is over-heated and greatly *rarefied*, is a frightful means of *obliterating* the air-cells, and thus establishing a weakened condition of the lungs. Every person has felt at some time the difficult and laborious respiration that is caused by warm and crowded rooms. In the natural state every air-cell is of full size, *rounded* and *plump*, like a bladder distended with air. The cells should never be empty, or collapse. It is well known that if the arm be suspended in a sling, the muscles, remaining in a state of rest, become shrunken, and flabby, and weak. Just so, if the air-cells are not continually and vigorously distended with fresh and *natural* air, they become inactive, relaxed, and as some of the fibers of the unused muscle shrivel and disappear, so a greater or less number of the air-cells will collapse; and if not soon restored by breathing a sufficiency of pure air, they become permanently closed, and the capacity of the lungs will be so far destroyed. But as confined air is always more or less robbed of its oxygen, and impure, there is a double reason why confinement in such an atmosphere should prove a cause of producing tuberculous matter in the blood. The person subjected to such influences suffers a *slow and partial suffocation*, or *hanging*; and the manner in which this leads to the deposit of tubercles in the lungs, and finally to consumption, has been already explained. Hence we may readily understand why it is that persons whose occupation is *within doors*, and whose habits are *sedentary*, are so much more liable to this disease than those whose feet daily press the green earth, and whose brows are fanned by the breezes of heaven.

“*Self-Abuse.*”—Excepting confinement in impure air, *no cause* is more productive of consumption than this. Its victims are found alike among the young and those of middle age, in both sexes, and in all classes and avocations in life, not excepting (strange to say!) even the ministers of the pure Gospel of Christ! Few persons are aware how many of the “loved and lost” have been dragged prematurely down to the grave by this deadly vice of *unnatural* indulgence. A sentiment so proper in itself, so necessary to our

present state, that without it the race would be annihilated, is thus perverted, in the face of *reason*, *chastity*, and *conscience*, to the basest purposes; and in place of conferring unmingled enjoyment, is made the source of misery, disease, and death. Nature is perfect in her adaptations, as her Author is perfect in wisdom and beneficence; and we should never have been called to behold on every side so many *dwarfed* and *diseased* human frames, so many shattered and puerile human beings, but for the astonishing prevalence of this "solitary vice," which saps the foundations of the constitution in its very growth, and consigns the powers of soul and body to ruin! Every year this vice carries its thousands of wretched victims to the consumptive's grave.

To the catalogue of the causes of consumption must be added *licentiousness*, and *excessive* sexual *indulgence* in cases where *legal ties* seem to give free rein to appetite. Yet it is probably true that where these slay their hundreds, "self-abuse" slays its *tens of thousands*. *Excess* culls a sacrifice here and there—and, alas! but too many are offered on its altar; yet where one falls under its baneful influence, a hecatomb is cut down by the allurements of "solitary vice."

Insanity, as well as consumption, is produced by the practice of "self-abuse." From the reports of the Massachusetts and Ohio Lunatic asylums, it is found that the ratio of cases arising from this cause to the whole number of cases admitted, is fully as great as 10 per cent. It is not too much to say that in *one third* of all the cases of death by consumption between the ages of 18 and 30, sexual excess in some form is the chief cause, or at least one of the active causes, of the disease. How many cases of decay of the bodily powers, and of early dissolution, for which other causes are usually assigned, and even in the instance of young married persons, are really due to the prostration of the vital energies induced by this fatal form of excess! Let the young of both sexes, *married* and *single*, as they regard their present and future happiness, and as they would escape the slow but sure coils of consumption, *religiously* restrain this passion, and keep it under the control of judgment and reason!

The way in which consumption is induced by these causes will

readily appear to the thoughtful reader. Than "self-abuse" or excessive indulgence, no other cause produces more certain and more lasting debility. They depress and enfeeble all the vital operations. The respiration especially becomes lowered and feeble, and the circulation languid. Hence the blood is made to retain its impurities, while it loses its vitality; and in this way the conditions that generate consumption are established, and unless these tendencies be counteracted, the disease in due time must appear.

Other Depressing Causes.—Whatever greatly reduces the strength or depresses the feelings is liable, in the way just explained, to produce tubercular consumption. Among such causes are *excessive toil*, with the *hands* or *brain*, *fear*, *despondency*, *grief*, *care*, and *anxiety*. These allow the vital powers to *ebb low*, and lay the foundation for that disease which "cometh like a thief at night." How many thousands, by *living too fast*, or by nursing some secret care, are even now sowing within their own organs the seeds of a lingering death; seeds of whose taking root a "troublesome cough" is soon to give the first warning indication! How many a wife or mother has gone down from her watch of weeks or months at the bedside of a sick and dying husband or child, to a consumptive's grave! Attendance on places of evening amusement, with the loss of rest, fatigue, and influence of impure air that must be experienced, is a fruitful source of consumption.

Several instances of consumption have come under my notice which were directly produced by mental anxiety concerning the loss of friends or property. The patients had previously shown no signs of tubercles, and were of a sound and healthy constitution. But now the respiration was feeble, the countenance anxious, the digestion and appetite gone. The demon of care seemed to sit like a brooding angel in the chamber of the soul. Hope, on the contrary, is known to be a powerful tonic to the system. And yet, although Hope, like a guardian angel, attends the consumptive through all his lingering journey to the grave, it fails in this inexorable malady, if in no other, to restore health, unless aided by some mysterious interference of nature, or by the most judicious medical treatment.

Climate.—Very little is yet known in regard to the influence of

climate in producing this disease, although very much has been said and written on the subject. It is certain that a *cold and damp* climate, or one liable to *frequent and sudden changes*, is the source of a strong predisposition to consumption. On the other hand, sections in which bilious diseases prevail, are quite free from this scourge. Long exposure to cold and dampness, as in the case of workmen engaged about marshes or streams, or persons insufficiently protected from the cold of winter by shelter or clothing, is a fruitful source of the disease.

Poverty.—This is not itself a cause of disease, but it becomes such through the unfavorable conditions that attend it. These are: insufficient and unwholesome food, exposure, anxiety, and want of cleanliness. Lombard estimates the number of deaths from consumption among the wealthy classes in Geneva (Switzerland) to be not more than *one half* of that occurring among the laboring population.

Drug-taking.—The body can not maintain its vigorous life, and resist the encroachments of disease, while we constantly introduce into it the most foreign, nauseous, debilitating, and often actually *poisonous* materials. The ignorance of physicians who prescribe these noxious drugs, and the timid fears of the people that lead them constantly to swallow such preparations, are accountable for too large a share of the consumptive mortality we witness on every side.

I boldly affirm that, after a deposit of tubercles has taken place in the lungs, no medicines given into the stomach can prevent their further formation in the blood, or remove those already deposited. Instead of preventing the further progress of the disease, the direct effect of drugs is to derange the system and reduce the strength, and thus to hurry on a fatal termination. No case of tubercular consumption was ever cured by the administration of drugs into the stomach and none ever will be, so long as the disease and its causes remain what they are. I shall speak more fully of the effects of drugs when I come to consider the prevention and treatment of this disease.

Tobacco.—There can be no doubt that the free use of this poisonous herb, especially by the young, is a prolific cause of con-

sumption. By its deadening effects upon the nervous system, it interferes with all the operations of life. The irritating air of the cigar or pipe, and the stupefying influence of the *quid*, alike sow the lungs with the germs of disease and dissolution.

Tobacco, being a stimulant to the nervous system, produces a *forced* life—an unnatural activity, yet being at the same time a deadly narcotic poison, so much so that a few drops of its oil placed on the tongue instantly destroys life, it exerts a paralyzing and weakening effect upon the heart and the entire muscular system. Many have experienced the death-like feeling of prostration produced by swallowing the juice of tobacco. In either smoking or chewing, this property of the herb has its effect on the air-cells, weakening their action, while in the former case, the irritation occasioned by the entrance of a hot, acrid smoke which seldom fails to draw tears from the eyes, into the equally delicate structure of the lungs, can easily be conceived. A person with consumptive predisposition should religiously avoid the use, in any form, of this debilitating and poisonous weed.

Mechanical Causes.—These constitute a fruitful source of consumption. I include, under this head, whatever acts to produce *pressure upon the lungs*, so as to hinder their free and natural expansion. Lawyers, clergymen, clerks, shoemakers, tailors, seamstresses—all who follow sedentary pursuits, especially those sitting at writing-desks—are apt to adopt a posture which cramps the lungs, and thus induces the disease. Physicians, whose duties require them to be much in the open air, seldom die of consumption. Some writers attribute the disease to public speaking; yet I know of no better preventive, in fact, than a thorough and frequent exercise of the lungs in speaking, provided it be in a *pure atmosphere*. How many in this great city date the origin of consumption from the *counting-room*. Confined steadily for hours, in an unnatural posture, and in over-heated rooms, they seem to be self-devoted to the influence of the deadly scourge. In many instances, several clerks thus sit together in a very small room, the air of which is still further poisoned with tobacco-smoke! To expect that health can exist under such circumstances is to expect *impossibilities*; and it is no “dispensation of Providence” that the

penalty of death is visited upon him who thus, knowingly or ignorantly, violates the laws of his existence.

Females suffer the same effects, only in a still higher degree, from the destructive habit of "tight lacing." To think that intelligent beings should sacrifice health and life to a misconceived idea of beauty, is unpardonable. In the statue of the *Venus de Medici*, or in any of those fine statues of antiquity which are justly considered as models of the perfect female form, it will be found that the waist is large and the chest full. By "tight lacing," the stomach is compressed and digestion interfered with. But the greatest evil is the *dead grip* of the unyielding band that encircles the lungs, and stifles their natural expansion. Who has not witnessed in these instances the *rapid* and *labored* breathing, showing itself, where only it can, in the upper part of the chest, as if the lungs were ready to burst the bonds so unnaturally imposed upon them? *Strangulation* is taking place as effectually as if a rope were around the neck. Suicide is being committed; consumption is being invited. And yet every year new implements of torture are imported, thus to sap the foundations of the life and health of thousands!

Besides the effects already alluded to, "tight lacing" paralyzes the nerves on which pressure is exerted, compresses the blood-vessels, and produces injury in many other ways. Its subjects take the power of the Almighty into their hands, and hurry themselves into eternity before the allotted time. The "shortness of breath," and the impossibility of drawing a deep and full inspiration, that follow this process, are easily explained. Under the continued pressure many of the air-cells become closed, and, without doubt, *permanently*, so that by artificial means a pair of lungs naturally of good size are thus made *small* for life.

Vigorous health will support the graceful curves of the osseous framework of the body without the necessity of artificial props. Let the chest have free expansion; let the blood-vessels perform their office untrammelled by fashionable fetters; leave to the nerves the power of *sensation*, and to the blood its *purity* and *vigor*, and the grand temple made for God's spirit to dwell in will appear before us in all its perfection and beauty!

There are other causes, however, why the mortality among females from consumption is greater than among males. The occupation of most females precludes *out-door exercise*. If the advocates of "Woman's Rights" would first of all inculcate the *right* of every woman in the land to out-door exercise, pure air, and, in fact, complete physical development, and the *duty* of every one to secure these, they would be conferring on their fair countrywomen a real and lasting benefit.

Inhalation of Irritating Particles.—The continued inhalation of certain mineral and other vapors, as the vapor of mercury, of varnish, and of the "drying oils," is a frequent cause of consumption.

The same is true of the inhalation of the fine dust from their work, by stone-cutters, needle-pointers, knife-grinders, and those who work in feathers, hair, wool, and cotton.

With this subject I close the consideration of the causes of consumption (excepting the case of those maladies which act to generate the disease); yet I do not claim that outside of that exception even, the list now given is complete. So long as the laws of life and health are daily and hourly violated, consumption will ever remain the great "destroyer" of the human race.

When will people learn to *avoid the causes*, and so escape the consequences, of this dreadful disease! When will they understand the absolute necessity of *pure air, free exercise, and a healthful diet*, to ward off and prevent a malady that desolates every hearth with its ravages? When will they discover the *worse* than utter folly of depending upon *drugs* for its prevention and cure?

OF THE DISEASES WHICH

Predispose to Pulmonary Consumption.

THE first of these which I shall name is *bronchitis*, or an inflammation of the *mucous membrane* of the throat, trachea, and bronchial tubes. It must be remembered that it is through this membrane, where it has become exceedingly thin, as in the air-cells, that the important change takes place, consisting in the entrance of

oxygen into, and the escape of carbonic acid gas from, the blood. In a healthy condition this membrane secretes a small amount of a glairy fluid called *mucus*, the office of which is to shield the membrane itself from the direct contact of the air contained in the lungs. This membrane also lines the cavities of the nostrils; and it is well-known that in winter an increased amount of its secretion is often discharged both from the nostrils and from the throat and lungs. In the former instance we speak of the difficulty as a "common cold," "cold in the head," or "catarrh;" and in the latter, as a "cold on the lungs," or "bronchitis;" or, if the inflammation is confined to the throat, a "sore throat," which is also technically termed "laryngitis."

Much practical information may be drawn from a clear understanding of the way in which any of these forms of "common cold" lay the foundation for confirmed consumption. When inflammation takes place upon the mucous membrane of the nose, throat, or lungs, the natural secretion is at first greatly increased, and is thin and watery. After a time the secretion becomes thick and tenacious, so as to require a violent effort to dislodge it; and finally it is still more changed in character, becoming whitish, yellowish, or greenish, heavy, and more easy of expulsion, when the cold is said to have become "loose." In all stages of the cold, this secretion occasions sneezing, or cough; and this continues as long as its quantity is much increased. The cough is an effort of the system to remove the existing difficulty; as in no instance can the diseased mucus be absorbed into the blood, and the only outlet for it is by cough and expectoration.

When these difficulties affect the mucous membrane of the lungs they interfere in two ways with the necessary change of the blood in the lungs. *First*, the effect of inflammation is always to thicken the membrane, and in cases where colds on the lungs have been frequent, the membrane becomes permanently thickened, the effect extending to the air-cells. *Secondly*, the secretion fills up a portion of the air-cells and of the bronchial tubes; and in both these ways the quantity of air coming in contact with the blood is diminished. Thus the condition of the blood which tends to the formation of tubercle is produced.

Now, the secretion expectorated in a common cold is far from being tuberculous; it has no resemblance to it. It may be the cause of tubercles, however, by filling and closing the air-cells, or the passages to them. The discharge of a common cold is formed by the lining membrane, but changed in quality from that of health; while the matter of tubercle is poured through from the blood into the air-cells, or into the substance of the lung, as gum is poured out upon the bark of a tree. Either of these secretions in the lungs may produce death, but in very different ways.

It must be remembered, in this connection, that the constant tendency of attacks that are at first confined to the head or throat, is to "*to travel down*" into the lungs, and thus, after a number of repetitions, the "cold in the head," or "sore throat," affects the membrane of the bronchial tubes, and produces the same consumptive tendency as in the cases already alluded to. But again; the trouble in the throat or bronchial tubes is often but an indication of tubercles in the lungs, which has not yet manifested itself in any other way. Thus very often an obstinate "throat disease" absorbs all the attention of the patient and physician, while, in reality, it is but a concomitant of the more terrible disease, consumption, which in disguise is steadily working its ravages in the lungs. And we must bear in mind, also, that a *susceptibility to colds* is itself one of the symptoms of consumption; so that in many instances the common cold, instead of being the trifling matter it is often supposed to be, is really but one indication that the vigor and warmth of the body are already beginning to fail before the invasions of tuberculous disease.

Cough is always a prominent symptom of inflammation of the throat or bronchial tubes. It is particularly a symptom of consumption. How are we to distinguish the two cases, which require a widely different treatment? Much has been said and written upon the value of auscultation and percussion, as tests of the nature of the disease present in a given case. By auscultation we are to understand the act of *listening* to the sounds made in the chest during breathing; and by percussion, the act of *tapping* on the chest with the fingers, to ascertain whether the sound of the cavity within is *hollow* or *dull*. Now these methods are valuable when

understandingly practiced, and taken in connection with the ordinary symptoms of the several diseases; but taken alone, or as practiced by an inexperienced person, no value should be placed upon them. There are many physicians who carry about with them a hollow stick, tipped with ivory, which they call a *stethoscope*, and of which and their ability to use it they make a great parade, who might as well apply their instrument and do their *drumming* on the patient's head, as upon his chest! There are many of these who know about as much of tubercular consumption as an Arab may be supposed to know of a steam-engine, and yet who are forever flourishing their stethoscopes, especially when the patient in the case is a lady!

To employ auscultation and percussion to any purpose requires a quick and practiced ear, and a nice and delicate touch. But the only sure and positive means of distinguishing between long-standing bronchitis and tubercular consumption, is that afforded by *chemical* and *microscopical* examination of the expectorated matters; and by these means the distinction is as easy to the practiced eye, as that between arterial and venous blood is to the ordinary observer. Under the microscope the difference in the formation of the two kinds of expectoration is clearly seen; and in the same way we may also detect the different stages of either of the diseases named.

What has been said of bronchitis as a cause of consumptive disease, may also be said of pneumonia, or "lung fever." In this disease, which is an inflammation of the substance of the lungs, the air-cells become closed by the swelling of the surrounding tissues, as well as by the collection of bronchial mucus. How often is consumption truly dated from an attack of lung fever! Every one knows the importance of keeping the cough *loose* in this complaint, and of promoting expectoration.

Indeed, any disease which greatly reduces the vitality of the system may, in the manner which has been already explained, result in producing tubercular consumption. Thus we see this disease frequently following *fistula* in old persons, and diabetes and certain fevers in persons of all ages. It is particularly liable, as is but too well known, to follow almost immediately upon

attacks of *measles*. If, in this disease, the eruption is not well brought out, and more especially if from a cold it is caused to recede, or "strike in," the morbid matter which should escape by the outer surface is almost certain to be thrown upon the mucous membrane of the bronchial tubes; an obstinate inflammation, accompanied with cough, is the result, and the difficulty, in three cases out of four, terminates in consumption.

Thus I have endeavored to give, as briefly as their importance would allow, an account of the principal causes of the most dreaded malady, in all considered, that now afflicts the human family. These causes merit the study of all, but especially of those who have families to rear, and of those who know themselves to have sprung from a lineage on which, in greater or less force, consumption has been entailed. It is not always, nor often, a single cause that originates consumption; and hence those who know they are under the influence of one of its causes, should be more prudent in avoiding all others.

In pointing out the causes which directly or indirectly lead to pulmonary consumption, or which hasten its progress when once its seeds are sown, I have presented a chart only of the *principal streams* leading to the great terminus. Upon this subject I claim to have thrown no *new* light, but I believe the reader will confess that I have taken unusual pains to present a clear view of the principal causes of the disease which I have been considering; and in showing *how* it is that all these causes act to induce the disease, I claim to have taken one *step in advance* in the elucidation of the mystery that has long overshadowed this subject. I have endeavored to raise the curtain, that the spectator might witness the secret operations of nature going on behind it. And I believe I have shown that the long-cherished doctrine, that tubercular consumption is a general disease, is erroneous in theory, and the foundation of a false and unsatisfactory practice.

Mortality from Consumption.

How few of those moving among the living, know of the buried dead that have fallen victims to this terrible disease! How few have ever calculated the numerical strength of the slain! Yet every year there is a mighty army of living beings hurried off by the dread "Destroyer;" and if I should say that his victims outnumber those of war, I should but assert what the statistics are at hand to prove.

It is time that the profession, that society should awake from its secure slumbers, and weigh well the dangers of a disease that sweeps its thousands from the earth, as a scythe sweeps down the standing grain. It is time that each should "mark, learn, and inwardly digest" the statistics that have been collected relative to the mortality of this disease, a few of which are presented in this section. Year after year the number of its victims increases, and should the funeral trains that have escorted their remains to earth be placed in a line, they would border all lands with the shadow of mourning. But the dead can not be raised; and my appeal, therefore, is to the living—to those who, with sorrowful and anxious eyes, are watching the drooping of some household flower—to that father, whose failing daughter has been his pride and hope—to that wife, who clings for support to the sinking arm of proud manhood—to that husband, whose adored partner is now drooping under the first breaking forth of the seeds of a lingering death. See! Read the frightful statistics here presented, and judge if it is not time to arrest the progress of the arch-enemy of life.

From the weekly bills of mortality in different cities, and the reports of hospitals, it is found that the average number of deaths from consumption, annually, in the whole population, is as follows:

Boston,.....1 in 236.

New York1 in 267.

Baltimore,.....1 in 290.

Charleston1 in 426.

The ratio of consumptive mortality to that of other diseases in the same cities is found to be, in—

Boston	(period of 5 years).....	1 in 6.6
New York	(" " 4 years).....	1 in 7.2
Baltimore	(" " 10 years).....	1 in 5.4
Charleston	(" " 5 years).....	1 in 6.9

In two years, in this city, the deaths from this disease were—

Among males—in 1848.....	946
" " in 1850.....	982
	<hr/> 1,928

Among females—in 1848.....	923
" " in 1850.....	949
	<hr/> 1,872
	<hr/> 1,928

Total of two years, 3,800

The proportion of deaths by consumption at different ages, was as follows :

	Under 1 year.	1 to 2 yrs.	2 to 5 yrs.	5 to 10 yrs.	10 to 20 yrs.	20 to 30 yrs.
1848....	62	41	55	31	133	516
1850....	76	63	55	28	144	559
Total...	<hr/> 138	<hr/> 104	<hr/> 110	<hr/> 59	<hr/> 277	<hr/> 1,075
	30 to 40 yrs.	40 to 50 yrs.	50 to 60 yrs.	60 to 70 yrs.	70 to 80 yrs	
1848....	549	282	164	69	31	
1850....	435	274	143	88	35	
Total...	<hr/> 984	<hr/> 556	<hr/> 307	<hr/> 157	<hr/> 66	

The Registrar-General of London, in his Report for 1842, states the ratio of deaths by consumption to the whole population to be 1 in 262; and the ratio to the deaths by other diseases to be 1 to 7.1. Throughout England, 4 in 1,000 die annually of this disease, being from *one fifth to one sixth* of the whole number of deaths.

In the Windward and Leeward Islands, West Indies, the average is 2 in 1,000; in Jamaica, 1 in 1,000; in Bermuda, 1 in 2,000; in the Ionian Islands, 1 in 1,250; at Gibraltar, 1 in 2,500; at Malta, 1 in 909.

The effect of difference of climate on the frequency of *hepatic* (liver) *disease* is readily seen by referring to the tropical regions of the Eastern Hemisphere, where the deaths from this cause are more frequent than in any other part of the globe. Thus, at Mauritius, 82 in 1,000 men are attacked annually, and 4 in 1,000 men

die; while at Ceylon, 55 in 1,000 men are attacked annually, and 5 in 1,000 die.

Lombard, in his "Essay on Consumption," states the average of deaths from this disease to be 114 in every 1,000 of all that occur, and gives the following table of the influences which tend to its fatality:

1. Inhalation of mineral and vegetable emanations.....	176	in 1,000 deaths.
2. " " various kinds of dust.....	145	" "
3. A sedentary life.....	140	" "
4. A life passed in workshops.....	138	" "
5. A warm and <i>dry</i> atmosphere (?).....	127	" "
6. Stooping posture of body.....	122	" "
7. Shocks to the chest from violent movements in the arms(?)	116	" "

Influences unfavorable to the development of consumption:

1. An active life.....	89	in 1,000 deaths.
2. Exercise of the voice.....	75	" "
3. Life in the open air.....	73	" "
4. Animal emanations.....	60	" "
5. Inhalation of watery vapor.....	53	" "

It will be seen that I have questioned two of the statements of this authority, the first in regard to the unfavorable influence of a *warm and dry* atmosphere, and the second respecting shocks by *violent movements of the arms*. The latter is a cause not mentioned by other authors, and one, the correctness of which, from the known beneficial effect of exercise, especially of the muscles of the arms and chest, in developing the capacity of the lungs, we may be allowed seriously to question.

With regard to the effects of a warm and dry atmosphere, I have in my possession the statement of Dr. Zeiler, for many years a surgeon in the French army in Algiers, and now practicing in this city, who declares that consumption is peculiarly rare in that country, and that he has never known a death by the disease to occur among the native population there. Very hot and very cold countries are almost wholly exempt from this disease. On the other hand, it is well-known that a *moist* atmosphere and a *middle* latitude is peculiarly favorable to the production of consumption; and, in our own country, it is in those localities that are damp, and in the Northern, Middle, and Eastern States, that the disease par-

ticularly prevails. It is also a well-authenticated fact, that the mortality from consumption is greater in the vicinity of large bodies of fresh water, as along the shores of our inland lakes, than in the neighborhood of salt water, as for example along the Atlantic coast.

In regard to the frequency of deaths from consumption in foreign countries, at peculiar ages, I extract the following from Swett's admirable work on "Diseases of the Chest," one to which I am indebted for other valuable tables in this volume.

In London, the period of greatest frequency is from 25 to 35 years; the second period, from 15 to 25 years; third, from 35 to 45 years; fourth, from 45 to 55 years; fifth, from 5 to 15 years; sixth, from 55 to 65 years; seventh, under 5 years.

In Paris, the period of greatest frequency is from 20 to 30 years; second, from 30 to 40 years; third, from 10 to 20 years; fourth, from 40 to 50 years; fifth, from 50 to 60 years; sixth, under 10 years; seventh, from 60 to 70 years.

I have presented these tables in order to show clearly to the non-professional reader the extent of the fearful mortality arising from the disease under consideration, and also the difference in its mortality in different climates, at different ages, and under diverse occupations. The reader who will carefully study these figures, will be astonished at the prevalence and destructiveness of this disease, and he will, I am sure, acknowledge the eloquent warning often conveyed in a page of statistics!

But there is a fact that must not be overlooked in this connection, because it shows the true importance of the results stated in these tables. It is this: that all this startling amount of mortality is *premature mortality*! Death by consumption never could have been intended to be the natural mode of exit of any human being from the shores of time. Consequently these tables do not merely show so many deaths by consumption, but so many premature deaths—so many lives brought to an early and violent termination, that should have been prolonged to a "good old age" of usefulness, honor, and enjoyment.

Is Consumption Contagious?—An idea is entertained by many persons that consumption is contagious. But I do not hesi-

tate in affirming that this disease is in no case capable of communication by one person to another. As cases of consumptive contagion, there have been mentioned many in which wives have seemed to contract the disease from their husbands, husbands from wives, children from parents, and parents from children.

It is evident that those who maintain this view are very ignorant of the facts respecting this disease, or very short-sighted in their estimate of them. The wise doctors who countenance this belief, have not duly considered, I fear, the long-protracted watchings of the wife and mother over the husband or child, her sleepless nights, spent in a close and confined air, or the grief and anxiety that weigh down her spirits. These will be found to be the causes that have *produced* the disease, instead of its having been "caught," as is an attack of measles; or that at the most have hastened its development, when the seeds were latent in the system. I do not believe that the air exhaled from tuberculous lungs is more healthy than pure air; but I confidently declare that no matter of contagion has ever been discovered in it. With as much reason might we suppose a common cold or a headache to be communicable by the sufferer to those around.

Those who have friends sick with consumption, therefore, need have no fears of contracting the disease. Let them observe strictly the general rules of health, take exercise daily in the open air, expand the chest by full inspirations, and attend to cleanliness and diet, and they will have in such a course a sure guaranty, not only against this disease, but against all the "ills that flesh is heir to."

Symptoms of Consumption.

THERE are two stages in which the symptoms of tubercular consumption strike the physician with unusual force; and these are the only stages in which the work of the dreaded disease is apparent to the patient or to his friends. These are, first, the period

from the first slight cough and feeling of uneasiness in the chest, to the softening of tubercles; secondly, from the commencement of softening and ulceration, to the termination of life.

Medical writers, however, recognize three stages of the disease; the *first* being, that in which the deposit of tubercles is going on in the lungs. To these I would add, or rather prefix, still another stage, the first in point of time, thus making *four stages* in all. This is the period during which the system is undergoing the changes that prepare it, by the formation of tuberculous matter in the blood, for the stage of deposit, since it is evident that this deposit can not take place until the very peculiar material of which it is composed has been allowed to form and accumulate in the circulation. Hence the four stages are, *first*, the preparatory; *secondly*, that of deposit; *thirdly*, that of softening, etc.; *fourthly*, that of breaking down of the lungs, ending in dissolution.

Having indicated these stages so that they may form in the reader's mind a guide to the progress of the disease, I shall now proceed to the symptoms of the disease under consideration. In doing this, my attention will be directed chiefly to the earlier symptoms, since these may be more doubtful in the mind of the invalid; and it is proportionally of great importance that a correct judgment should be formed concerning the nature of the difficulty at this period. But when the disease has reached its last stage; when the hectic flush paints the cheek with unearthly beauty; when a constant cough racks the form, and when fever, night-sweats, and the panting breath fill up the sad picture of decay, *then* no one can fail to decide as to what is the disease present; and then, also, it is often too late to afford relief.

It is my object to speak particularly of the early, and often unnoticed, symptoms of this disease; the first *faint*, but *meaning*, signs which declare *tubercles* to exist already in the lungs; possibly that they are even now softening and destroying the substance of those organs. Although obscure, and often little heeded by the patient, these symptoms, to the discriminating physician, are like mutterings of distant thunder, foretelling the coming storm.

Some writers have enumerated many different forms of consump-

tion, as acute, chronic, latent, and so on. But I suspect the only value of this division is to show the learning of those who make it. The disease is *always chronic* and *insidious*; never otherwise. If its course is more rapid in some cases than in others, and its character different, it is wholly owing to difference of constitution and circumstances in different patients. A careful history of the symptoms that have marked each case is the best guide to the treatment it will require.

In previous chapters I have described the slow filling-up of certain points in the lungs with tuberculous matter, which, being deposited *layer upon layer*, forms small masses, at first resembling the *white of eggs*, but afterward becoming more hard and yellow, like *cheese*. It is this innocent-looking material that is as destructive to *lungs* and *life* as so many *sharp gravel stones* would be, if such could be forced into the delicate structure of those organs. When the substance of the lung has been once totally destroyed by the ulceration that takes place in and around these tubercles, it can never, of course, be restored. It is useless to attempt the creation anew of any organ, or any part of it, that has been once obliterated; yet much may be done to *delay*, or even to *prevent* the injury with which the lungs are threatened, if the means are used in time. Hence the importance of understanding the peculiar symptoms that characterize the earlier stages of this disease. Keeping this point in view, I proceed in the first place to describe the *history* of a case of consumption as it usually occurs.

Unfortunately, there are few symptoms by which we can detect consumption in its preparatory stage, or in the commencement of that of deposit; and even these are so slight and easily mistaken, that very little reliance can be placed upon them. There may or may not be slight emaciation, showing itself particularly about the hands, face, and chest. The fingers grow tapering, and seem long, and the skin becomes transparent, and sometimes has a pearly look, showing the blue veins distinctly through it. There is sometimes an unusual liability to a feeling of chilliness, and the person easily takes cold. The strength may or may not be diminished. There is in many instances a delicacy about the expression of the countenance, a brightness in the eye, and a quick play of feeling,

that give to their subject a kind of unearthly beauty, especially, if the patient be a female, and in some way add, in the eye of the beholder, a peculiar interest to the whole character. But the reader will at once perceive that all these symptoms are too slight, and too often the result of other conditions, to be greatly relied on.

During the stage of deposit, and of the changes that precede softening, the symptoms begin to grow more distinct. It is often the case that a person commences to cough, as the effect of a cold, or he will fancy he has taken cold ; and this cough continues for some time ; yet, being unattended with pain or uneasiness, little is thought of it, and the expectation is that it will soon subside. This it may do, and then after a time recommence, and go off again in the same way. Or it may come on with greater vigor and force, and the patient, becoming accustomed to it, pays no attention to the dread warning which is thus knocking for admission at the door of his judgment. He follows his business as usual, while the disease is stealing quietly upon him, and fastening its hold with a grasp it will be hard to shake off. He reasons with himself about his difficulty and its cause, and probably ascribes it to some excess he has been guilty of, to a damp room, the weather, or that "scape-goat" for all anxieties about health—a "*cold*," and thus quiets his conscience while his disease goes on, undermining his constitution and strength.

But the cough is next accompanied with expectoration. The patient finds himself hawking and spitting up "phlegm," which is colorless, or white and frothy. "Merely the result of a cold," he argues ; "wait a while, and it will pass off." Meanwhile the secretion increases in quantity, becomes thicker and yellower, or sometimes of a greenish hue. Pains now occur in the chest ; and the patient is, perhaps, alarmed by the sudden appearance of blood which he can not doubt is raised from the lungs.

The disease is now fairly at work ; the whole system is suffering. Tubercles are producing irritation and inflammation in some portion of the lungs ; they are softening at the center, and laying the foundation for abscesses. The patient now feels tired and uneasy ; his appetite becomes irregular, sometimes loathing the most delicate food, at other times craving food of any kind in great quantity. The tone of the system is destroyed, digestion becomes

disordered, the bowels are irregular—at one time affected with constipation, at another with diarrhea.

At this period respiration becomes difficult; the patient feels a sense of drowsiness and lameness. Walking hurries the breathing, and the patient sits down after any slight exercise, fainting and exhausted. Sometimes headache and anxiety accompany these symptoms.

At night, the sleep is unrefreshing; dreams, often of a frightful character, disturb the mind, and the patient awakes to find himself in a profuse perspiration, and perhaps almost suffocating from the interruption of the breathing. Fever now sets in, appearing in the afternoon, and generally going off in a cold perspiration during the night, which constitutes the much-dreaded “night-sweats.” At this point the patient may die, and thus the last stage may be apparently wanting. This probably occurs in cases where the deposit of tubercles is so general throughout the entire lungs, that the vitality of the system fails before the actual consumption of the lung is allowed to take place.

But it must be borne in mind by the anxious invalid, that the strongly marked evidences of disease which I have now laid down, *are not always present*. In many cases the disease steals slowly and insidiously onward, so as to be almost unnoticed until the breaking forth of violent cough, with free expectoration, hectic fever, and night-sweats, and all the symptoms of the last stage of consumption.

How important it is, then, that the patient should note the first warning of the advent of this disease—that the first symptoms should be taken as the enemy’s “signal” for the contest, and that the constitution that has been marked for its prey should be intelligently aided to do battle against the destroyer with all the force and energy that are left at its command. For what can an exhausted system, broken down and almost ready for the grave, be expected to do toward staying the power of a giant, and the perseverance of Death?

Having thus given a general outline of the disease as it ordinarily pursues its course, I shall in the next place speak at greater length of some symptoms which require to be particularly noticed, especially that of hemorrhage, or bleeding from the lungs.

Cough.—This is generally the first, and always a most suspicious symptom of the presence of tubercles. It is usually *slight* at first, *dry* and *hacking* in its character, only noticed, perhaps, in the morning, or after exercise, and is apt to be attributed to a *tickling in the throat*. Or the cough may be severe from the first, and it always becomes more so as the disease advances. It may disappear in the summer, returning during the winter; and it may thus come and go for years.

Like the other symptoms, this cough is not the disease, but an *evidence* of it. It is the unavailing effort of Nature to remove a disease that is too often seated beyond her power to reach.

Shortness of Breath.—Another symptom accompanying the hacking cough, and sometimes even going before it, is a shortness of breath. This may not be experienced while sitting still, but only after hurried or violent exercise, as going quickly up a flight of stairs. The breathing is thus accelerated, and there is a sensation as if the breath did not go *low down* in the chest.

Now this shortness of breath is, to say the least, not a comfortable symptom, particularly if it occurs in one who has reason to suspect that he *inherits* consumption. It indicates that some portions of the lungs are so clogged with tuberculous matter that they are prevented from performing their duty; in other words, that they have sunk into a state of inaction.

Chilliness and Heat.—A sense of chilliness, without any sufficient cause to account for it, and often amounting to distinct and frequent *chills*, is a symptom experienced in full *one half* the cases that have come under my observation, in the earliest period of the disease, and often before any other symptom has appeared. This is a sign of the greatest possible importance. The person finds himself liable to feel a sensation of *creeping chills* over the back, at any hour of the day or night, but particularly in the forenoon. These may be followed by “*flashes of heat*,” and burning in the palms of the hands and soles of the feet. There is also an unusual *sensitiveness* to cold, and to changes of the weather, so that the person easily takes cold from exposure. These symptoms should never be treated as things of slight account. They are ominous of *grave changes* going on in the lungs, and are the first intimations that

those organs are already beginning to fail to perform their office in purifying the blood and supplying vital warmth.

The Pulse.—In connection with the other symptoms named, the pulse is almost always somewhat *quickened*, especially toward evening. This acceleration may be slight until some active exertion is made, when the pulsations suddenly become rapid, perhaps also irregular.

Pain.—Shooting pains through the chest are very commonly observed, or a seated pain in the shoulder, or in the side; or this pain may come on after exercise. Sore spots are sometimes felt upon pressing over the lungs or along the spine. These indications almost invariably point directly to inflammation about *tubercles already deposited* in the lungs.

Debility.—Along with the hacking cough and other symptoms named, there is gradual loss of strength and slight wasting of the flesh, the muscles becoming soft and the skin more thin and clear. Even in an early stage of the disease, the hectic flush is often seen upon the cheek.

With all the symptoms now named upon them, thousands have still fatally deceived themselves, and been deceived by their physicians, with the flattering belief that their disease was only *bronchitis*. It is not natural for a person with *any* or *all* of the symptoms I have described to wish to believe that they indicate any serious trouble. Each seems disposed to attribute them to every cause except the right one. Now, in regard to bronchitis (which is a disease of the *lining* of the lungs, and not of the lungs themselves), it *may* exist without tubercles; but tubercles can never exist long in the lungs without bronchitis being produced by them, as one of their natural effects. So a man may *have bronchitis* of a truth, and *at the same time be dying of consumption!*

When the symptoms above named occur in a person of sedentary habits, or naturally of a "consumptive build," or of consumptive parentage, if they continue for any length of time, the chances are *nine out of ten* that tuberculous deposit has occurred or is taking place in the lungs; in other words, that the person is already in the second or third stage of consumption. The appetite may still remain good, and the general health may seem but little impaired.

But if it is proverbial that "appearances are deceitful," they are never more so than at the stages of this disease that have now been spoken of. To trust them, and overlook the growing indications of serious mischief that is being accomplished in the very strongholds of life, is evidently to sign one's own death-warrant, and to bargain for months of pain and disease, and for a premature departure from the schemes and enjoyments of time.

Hemorrhage, or Bleeding from the Lungs.—Bleeding from the lungs is a *frequent* and *fearful* symptom of consumption. It more certainly indicates the disease than all others put together. Whether occurring frequently, or at long intervals—whether so slight as to be scarcely perceptible, or poured forth in crimson torrents, it is ever ominous. *In ninety-nine cases in a hundred, it tells that tubercles already exist in the lungs.*

Hemorrhage usually occurs unexpectedly, and without any marked symptoms of its approach. Most persons who have "raised blood," particularly if it be the first time, believe that it came from the stomach, throat, or nose, and are reluctant to admit that it was from the lungs.

It is possible that a person may be laboring under all the other symptoms of which I have spoken, and still there may be a *doubt* whether the cause is tubercles; but if in connection with those symptoms bleeding should occur, every doubt may then be removed. Even if none of the other symptoms are present, "spitting of blood" is still an almost certain forerunner of the disease. For there are cases in which this is the first symptom observed; and it may even occur many years before the other indications of the disease show themselves. Thus it may appear while the person is apparently in the enjoyment of good health; and it may be repeated at one or more long intervals, before the commencement of cough and wasting of the flesh. It then shows that tubercular deposit is going on slowly, for the bleeding is caused *by* tubercles, and, except in the rare cases which I shall hereafter mention, it is a *certain proof* of their presence. Bleeding is, however, very apt to come on for the first time during the early stages of the disease; and it may appear in any stage.

From the tables which have been kept, it would appear that

nearly *one fourth* of those who die of consumption, have never bled from the lungs. I believe, however, that the number of those who have not bled at *some* period of the disease is much smaller than this. Of *five hundred and thirty-four* evidently consumptive persons, whose case has been particularly noticed in this respect, I have found that *four hundred and forty-one* had bled more or less. In itself, this hemorrhage from the lungs is not dangerous; it is only as an evidence of the steady march of consumptive disease that it is to be feared. Many who have bled live longer and suffer less than others who have not. It would seem to be one method which nature adopts to *cure* the disease, by removing the congestion of the lungs which tubercles ever produce.

Now, it is true that a person may have consumption, and die with it, and yet never have had the least hemorrhage. Tubercles *may* be deposited, and soften, and yet cause no bleeding. However, I believe that *ninety* in every *hundred* patients do bleed, sooner or later, much or little.

"Can a person have bleeding from the lungs, and not at the same time have tubercles?" is a question often asked of the physician. There are hundreds who, to allay the fears of their patients, speak of this symptom as of but little importance, telling them that the blood raised came from the *throat* or *nose*; and that the hemorrhage is caused by some slight irritation. It is possible that some of these men are honest in their assertions; but quite as likely that many of them are not so. I believe in telling patients the truth in regard to their diseases, and *the whole truth*.

Where hemorrhage from the lungs is considerable, the blood coming rapidly into the throat produces *gagging*; and thus the patient may think it is from the stomach. Sometimes the blood appears to pass from the nose; but in both these cases we shall observe that the last of the blood is raised *by coughing*, thus showing that it is really from the lungs. Patients are apt to be in these cases the worst deceivers of themselves; and too often they seize on some flattering circumstance to preserve their quiet, or even conceal the fact of hemorrhage from their physicians.

But let it be remembered that bleeding *from the throat* is a thing that *almost never occurs*, in any noticeable quantity; taking place

from the nose, it can easily be determined with a little care; and when it occurs from the stomach, it gives *black, heavy* clots of blood, very different from that which comes from the lungs. And let me say to those who have *spit blood*, I care not under what circumstances, that *there are not ten chances in a thousand that it came from any part except the lungs!*

I am not prepared to say that a person can have *true* hemorrhage from the lungs, and *not* have tubercles. I am aware that "*bloody expectorations*" are common in acute pulmonary inflammations, and in some forms of fever; yet patients may recover in these cases, and never exhibit any disease of the lungs afterward. Females whose "*menses*" are interrupted, or imperfectly established, frequently have a *monthly* bleeding from the lungs. Again, this may occur at the "*turn of life*." Now, persons thus afflicted *may* recover; *but in more than half the cases they do not.*

Most of the instances in which bleeding from the lungs does not *positively* denote the commencement of consumption or the existence of tubercles have now been mentioned, and it will be seen at once that these instances are extremely rare—they are, emphatically, "*few and far between.*"

In this city alone, *three thousand* persons must have bled from the lungs within the last year, and the direct cause in more than *twenty-nine hundred* has been tubercles in the lungs. I say again, it is a *fearful* and almost *certain* indication of the presence of that disease which "*cometh like a thief at night.*" It should ever be regarded with *suspicion*. And the man or woman who has had this symptom, if health has for such a one any charms, life any attractions, or the world any objects they would not willingly leave so soon, should lose not a day in deciding upon and taking such action as may be necessary to subdue this disease at a time when, if ever, it may be subdued, and that is, in its earlier stages.

For certainly it is in the earlier stages that a stand must be made against the inroads of this disease, if it is ever to be made successfully. And yet how often is this opportunity lost! The patient, it is true, applies to a medical man for aid; but too many have neither the ability to judge between the symptoms they ob-

serve, nor the quick perception to detect symptoms that are present. When it is too late to afford assistance, the physician cries out, "There is no cure for consumption!" and this is the patient's only satisfaction. Truly, there is no cure for any disease after the health has been wasted and the constitution destroyed. For remedies to produce any curative effect, it requires some basis of constitutional power to work upon.

Fig. 4.



In detecting diseases of the lungs, the instrument most frequently employed by me is CAMMANN'S STETHOSCOPE (fig. 4, *a*), which I consider superior to any other ever invented. Sometimes use is made of the common stethoscope, with a flexible tube (*b*). The great advantage of Cammann's instrument is, that being capable of accurate adjustment to both ears at once, the sounds made within the chest are heard much more distinctly than they could be by one ear alone. The effect is as if the sound was made louder. In cases where the patient is much emaciated, the smaller funnel (*c*) is attached, in place of the larger one shown in (*a*)—the smaller being more easily fitted to the surface of the chest. In using this stethoscope, the chest must be completely bare, the person quiet, and absolute stillness must pervade the room. The common stethoscope is better for use above and below the clavicles, and about the trachea and larynx.

The symptoms thus far named are called *rational symptoms*. There is another class of symptoms, generally termed the *physical signs* of

of the disease ; but as these require study and practice in order to arrive at their true indications, and as this book is written for the instruction of the unprofessional reader, I shall not be able to dwell on the physical signs at the length that would be required to make the subject intelligible. It will be sufficient to say that the air, in passing into and out of the bronchial tubes and air-cells, produces different sounds ; that these sounds are changed in diseases of the lungs ; and that by these changes in the sounds, together with the rational symptoms, the skillful physician is enabled to distinguish more clearly than he otherwise could the different forms of disease of those organs. In making this examination, it is necessary to compare the sounds, as heard on the two sides of the chest ; and thus the diseased, or most diseased, lung is easily detected. Besides this, the effect of percussion, in bringing out a dull or a hollow sound, assists the physician in forming his judgment of the nature of the case.

Such is the catalogue of symptoms which attend the first three stages of consumption. They are warnings to the patient that he can hope for no escape, if the disease is allowed to advance beyond the point of virulence it has now attained.

Symptoms of the Fourth, or Last Stage.—Here all is plain ! Disease gives full evidences of its ravages. There is no longer a mask of health covering up the decay within. There is no appearance of strong constitutional power resisting the inroads of disease. The patient sees the end of his way truthfully, but mournfully, presented to his view : on the right or on the left there seems no escape, and hopeless and sorrowful, he at last wraps the mantle of death about him and steps into the tomb !

There has been no saving power at hand ; tampered and trifled with, by those who have attempted to alleviate his sufferings, he finds he has but borrowed a delusive hope, and beheld the lamp of life flicker for a moment, only to go out in eternal night ! The encroachments of disease have been successful. The lungs, broken down and destroyed, are being actually *raised* from the throat in softened masses, mixed with fragments of tubercles !

There is apt to be, at this stage, a burning fever, which consumes the body during the day, and this is followed by exhausting and terrible “night-sweats,” which drain away the feeble remnant of

strength that is left. Blood now tinges the expectoration, perhaps for the first time. It may be poured forth in quantities, and then the patient feels terribly alarmed; for blood from within always sends a chill to the heart. The poor invalid abandons hope. The symptoms increase in severity as well as in number; the expectoration becomes thicker and more adhesive, or it has the look of soft cheese, and emits a disagreeable odor; or, again, it is watery, with bodies like kernels of boiled rice floating in it, and of a sweetish, sickening taste, or it is yellow and heavy, like pure pus.

In the young, diarrhea is often a formidable symptom, and greatly aggravates the disease. This difficulty is liable to give place quickly to constipation, and it is very troublesome in its treatment. Œdema, or swelling of the limbs, is commonly present. If the breaking down of the lungs occurs near the pleura, or covering of those organs, the ulceration sometimes perforates this membrane, and the matter is discharged into the cavity of the chest. This difficulty is termed *empyema*, and it is liable to produce severe inflammation of the pleura, or even suffocation, by pressure upon the lung. Sometimes a collection of water or of air takes place in the cavity of the chest; the former difficulty being known as *hydrothorax*, and the latter as *pneumothorax*. Tubercles may form, or water may collect on the brain, resulting in moroseness, aberrations of the intellect, and stupor.

There may be falling off of the hair, great thirst, and hoarseness, or entire loss of the voice. The pain produced by inflammation of the pleura, whether from tubercles lying beneath it in the lung, or from pus poured into the cavity which it lines, is usually very severe; and often this inflammation amounts to a serious attack of pleurisy, which may be repeated two or three times in the course of the disease. Besides the complications of consumption now named, there are many others, such as ulceration of the intestines, inflammation of the membrane lining the abdomen, fatty deposits in the liver and heart, and, in females, derangements of the function of menstruation; but the reader is referred for further light on these subjects to larger medical treatises.

In conclusion: it sometimes happens that, though *all* these symp-

toms may make their appearance, and though softening has occurred extensively in the lungs, yet the tubercles, which are the offending agents, may be discharged; those which remain may become quiet, or even be transformed into harmless *chalky masses*, the lung may heal by cicatrix, or scar, and the patient, snatched from the very jaws of death, may recover.

Such is rarely, however, the fortunate issue of a case of consumption. Under the action of the disease the lungs are commonly destroyed, and by continued suffering the power of the constitution is broken to such an extent that recovery is generally impossible. Too often the patient still pleases himself with delusive hopes, while the rose-blush grows richer on the cheek, and the death-stroke is stilling the heart; while the fever burns higher, and the "night-sweat" wastes away; while the pulse increases in rapidity, and the eyes take a bright, unnatural glare; while the figure becomes a skeleton and shadowless, the flesh flabby and "doughy," and the finger-nails long and curved like birds' talons; while diarrhea is more importunate, pain pierces the chest, and the features become distorted and wan, until at last the limbs swell unnaturally, the patient can no more raise himself to cough, but struggles for a breath as for life, growing still weaker and weaker in the useless conflict, and wasted to a living corpse, when the spirit at last takes its flight from a protracted scene of suffering, and the curtain drops on the wreck of another human life!

Duration of Consumption.—Dr. Swett, in his work on "Diseases of the Chest," p. 276, speaking upon this subject, says, "The mean duration of phthisis (consumption) has been estimated by a celebrated French physician at about two years, for the class of patients admitted into hospitals. This estimate is probably too favorable. *Two thirds* at least, of this class of patients, *die during the first year*, and one third during the first six months of the disease. * * * I have seen the disease in the highest class of society terminate fatally *in less than three weeks* from the first development of any symptom." On the other hand he adds: "I have known a case which was under the care of a medical friend during the long period of thirty-five years, before it terminated fatally from a recent and abundant deposit of tubercles."

It is certain that the duration of consumption has been very much shortened even within the period of the past thirty years. This change in our own country is within the recollection of very many now living. Formerly, the disease ran a tedious course of from ten to twenty or thirty years. Now, it hurries its victim to the grave in less than as many months. Yet there are a few cases of the slow form of the disease still to be found; and in almost every community there is some one who has had a racking cough and free expectoration, with all the evidences of consumptive decline, for very many years. I am acquainted with the case of a gentleman in the northern part of Ohio who has had consumptive cough and expectoration, constantly, for the last fifty years, and who seems no nearer the grave now than he did a score of years ago. But for one such instance a hundred can be named who have coughed through but a single winter, and whose graves have been covered with the first verdure of the opening spring.

It is not my object to attempt to account for this remarkable change in the general character and course of a widely prevailing disease, but simply to call attention to the fact. The deductions that should be drawn from this fact by the consumptive invalid are too obvious to need mention.

ON THE DIAGNOSIS OF CONSUMPTION.

By the *diagnosis* of this disease is to be understood the *means of distinguishing* it from other diseases, which resemble it in some of their symptoms. It is a matter of the greatest importance to the patient to know whether his difficulty is in fact consumption, which implies a deposit of tubercles into the lungs, or at least that the blood contains the elements of such a deposit, or whether he has a throat-disease, bronchitis, or tonsillitis, asthma, chronic pleurisy, or rheumatism. Any real knowledge on these points is ever of interest.

I have often been astonished at the incapacity of physicians who thought themselves quite capable of determining the presence of this disease, and of distinguishing it from other affections of the same parts. The mistake most commonly made is in asserting that consumption is not present when it does actually exist,

and calling it by the milder name of bronchitis, or disease of the throat. By this course, if the patient has confidence in his physician, his fears are somewhat allayed; and he is too apt to neglect the means and the time for a cure, while the secret enemy steals slowly, but too surely, into the vitals of his victim.

Now, if the physician is not capable of judging whether a person has consumption, bronchitis, or throat-disease, and can not discriminate the one from the other, he may do the patient a fatal wrong if he attempts to express an opinion, either one way or the other. Let him honestly confess his ignorance of the matter, and recommend the patient to one who understands the subject, if he knows such a one. But let him not wrong himself and his patient by trifling with a disease of which he knows perhaps little more than the untutored savage who roams the forests. He may be unaware a daily murderer—adding to the long catalogue of those who too soon go down to the tomb—digging the graves and erecting the monuments of those whose lives should have been saved!

As a general rule, it may be laid down that those who received their medical education twenty or more years since belong to the old ealomel, bleeding, and blistering elique, and know little of the means of distinguishing or treating consumption. Age is generally associated with wisdom; but it is to be feared there are exceptions to the principle. Almost every medical man, whether he be old or young, wise or simple, will be found to have great confidence in his own discriminating powers in regard to this disease, particularly if he be surrounded by industrious rivals. Doctors are too liable to disagree; and while the poor patient is vacillating between opposing theories, death steps in and the dispute ceases. It is to be feared that physicians are, as they ever have been, ready to make professional capital at the expense of their patients. I propose, therefore, to lay down such rules as will enable the patient to judge, to a good degree, of the nature and character of his own disease.

Few persons, I think, can have a disease of the lungs or throat without knowing the fact. The symptoms of these difficulties are very well and generally known. But these symptoms are often supposed to have their origin in the condition of other organs; and

it is very common with both physicians and people to refer them to the liver or stomach. These two organs have charged to their account more infirmities than are justly their due. "Liver complaints" and "dyspepsias" grow common just in the same proportion with ignorant physicians and credulous old ladies! I wish particularly to impress it upon the minds of patients, that it is simply a *popular error* that consumption is likely to be caused by diseases of the liver and stomach. In a large majority of fatal cases of consumption the stomach is found to be the most healthy organ in the system, and this is a wonder when we consider the amount of so-called "medicine" that is poured into it. The lungs exert a more important influence upon the stomach than the stomach on the lungs.

Cough and irregularity of breathing may be produced, once in a thousand cases, by disorders located in the stomach. I have seen, in the case of a strong, fleshy girl, a severe cough produced purely by hysteria, and which lasted in spite of treatment for a long time.

Let the patient bear the fact in mind, that when there is a cough which has continued for some time, with or without expectoration, shortness of breath, pain in the side, and wasting of the flesh, the difficulty is in the lungs or air-passages. Now that this cough proceeds from the tubercles in the lungs can not be definitely and certainly known to the patient, and he can only judge of the fact from various attending circumstances. Sometimes tubercles are coughed up in fragments, resembling pieces of cheese. These should be distinguished from the round yellow masses coming from the mucous surface of the throat, which are comparatively harmless. But when whitish or yellowish masses of an irregular or broken shape are expectorated, floating in thin or heavy mucus, there can be no doubt that the substance is that of tubercles, nor that these are deposited in the lungs. Such expectoration is not, however, a common occurrence.

If the symptoms above described appear and continue for some time in a person, who has reason to believe that he has inherited a tubercular tendency, it may be considered as almost a certainty that tubercles are being deposited in the lungs. To the patient under such circumstances I would say, "Do not deceive yourself—

do not suffer yourself to be deceived—into the belief that your disease is simply bronchitis, or disease of the throat, and that there need be no fear ! It matters little if either or both of the latter diseases do exist, for a deposit of tubercles can hardly take place in the lungs without producing one or both of these complaints, in connection with the symptoms proper to tubercles themselves. Bronchitis may exist without consumption ; but consumption without bronchitis, almost never.”

When the throat is affected, the symptoms are usually soreness, and redness immediately back of the tongue ; and this often involves the vocal chords, producing an alteration in the natural tones of the voice. Sore throat is one of our most common winter complaints ; and few persons escape it. When sore throat is not symptomatic of consumption it usually passes off in a few days ; although it may seat itself on the tonsils, and then may continue for weeks, affecting the voice to some extent and interfering with swallowing. In either case it is apt to be accompanied with cough and difficulty of breathing.

If the person attacked has been previously in good health, having at no time manifested disease of the lungs, the disease appearing suddenly and with considerable severity at the first, and gradually subsiding, as in the case of a “ cold,” it is very certain that the difficulty is confined to the mucous membrane of the throat or windpipe. Sometimes this difficulty takes a chronic form ; cough, expectoration from the throat, and slightly labored breathing being present, but with little or no wasting of the flesh. I have known hundreds of persons who had these symptoms during an entire winter, but disappearing at the approach of spring, and re-appearing at the return of cold weather. The disease in these instances may be local, and confined to the throat, the lungs being meanwhile healthy.

I have known many inexcusable blunders committed by physicians who have pronounced the *lungs* seriously diseased from the simple fact of a shortness of the breath. Now this symptom alone is utterly worthless in deciding between diseases of the throat and those of the lungs, for the physiological reason, that inflammation of the lining membrane of the throat (that is, of the

rima glottidis) always lessens the natural diameter of the orifice by producing swelling and thickening of the parts, and thus preventing to a certain extent the free ingress of air into the lungs, no matter how healthy the latter organs may be. Nature, ever provident in time of emergency, increases the number of respirations, in order to compensate for the loss of air in each inspiration.

I have known blisters, and croton-oil sores that ulcerated even to the ribs, produced upon the chest to relieve shortness of breath, in the idea that the difficulty was in the lungs! Let me repeat, that shortness of breath does not in itself indicate disease of the lungs. Disease of the throat (*rima glottidis*) is but too often mistaken for consumption, and is cured by a local application, which is in fact the only satisfactory and rational mode of treatment. The success attending the local treatment of this disease points as an index to the true method of treating the same form of disease when located farther down in the bronchial tubes.

I may say of throat-disease what has already been said of bronchitis, namely, that although a disease of the throat may exist without consumption, yet in nine cases out of ten where consumption is present, the throat will be found at the same time more or less diseased.

IS CONSUMPTION CURABLE?

No doubt exists in the minds of the best pathologists of the day, nor among physicians who have had the largest opportunities for observation, in regard to the certain curability of consumption. It is true that we find this fact asserted by some medical writers and others, whose testimony we are compelled to receive with a great deal of caution, from the fact that their observations have been made upon the cases of patients medicated according to the old plans of treatment, and therefore of all that occur the least likely to be blessed with a perfect recovery from the disease. Such physicians, in maintaining the curability of consumption against a large body of their professional brethren, have without doubt been driven to record as evidence cases which, in themselves, are of very questionable value, such as instances of convalescence from protracted and severe colds, bronchitis, and the like. Such "false facts" are not rare, by any means, in medical science; and they

would be particularly likely to accumulate a few years since, before the discovery of auscultation and percussion was made to aid the really inquiring physician in distinguishing consumption from all other diseases, no matter how closely resembling it.

But, making all necessary allowances for the results of incorrect observation, there are still numerous and well-authenticated instances of recovery, which prove beyond a question the cheering fact *that consumption is, and can be, cured*. Such instances are within the memory of almost every physician and careful observer, and that even after all the symptoms of the disease were present, and after ulceration and breaking down of the lungs must have commenced. Yet such recoveries do not take place as the result of *drug medication*, but, as really candid and well-informed members of the medical profession have always been free to confess, "in spite of the medicines" used. They will be found to be, in most instances, the fortunate but perfectly natural results of the laying aside of drugs and other bad habits, of taking up a life of activity in the open air, and adopting the generous use of nutritious, blood-forming food. Thus they are examples of the "healing power of nature," acting unassisted and alone; and they are illustrations of what might be accomplished by the aid of a suitable course of treatment, in the cure of a much larger proportion of all the cases of this dreaded disease.

There are many so skeptical in regard to the curability of this disease, that they are in the habit of saying in every case of recovery, "If the patient has got well, then he did not have consumption." Such persons, by a gratuitous assumption, have placed themselves entirely beyond the reach of argument, and we can not of course expect them to be convinced. According to the same authorities, *cancer* is never cured; and the *fact of recovery* is the strong point in their diagnosis that the disease could not have been cancer!

Now, besides the glaring absurdity of supposing that any form of disease whatever must be *universally and absolutely incurable*, those who take such ground should be capable of perceiving that, in placing themselves where they do, they stand in their own light by assuming the very point to be proved. And it would not be

surprising to learn that they are driven to make this assumption by the entire want of evidence under which they must of necessity labor.

And yet, while I would be far from allowing my name to stand among those of the positively skeptical on this point, I am equally averse to being classed with those empirics, in this city and elsewhere, who, for the sake of gain (for surely no other motive could induce men to falsify the truth in a matter of so much moment to the afflicted), give assurances of a speedy and certain cure to all indiscriminately who come to them for examination or advice; and who would bid the patient "be of good cheer," and rely implicitly on the virtues of their vile compounds to effect a cure, even though the lungs were full of open abscesses, and the powers of life were like the wasted lamp flickering in its socket, before it expires! I warn patients against trusting with their lives those who thus hold out prospects of a cure in every case, no matter how desperate the symptoms that may be present. Fortunately, the good sense of the people can not long be blind to the springs of such "zeal without knowledge."

But, on the other hand, we have the testimony of some of the brightest lights in the medical profession, and among them the most distinguished writers on pathology, to the fact that consumption is curable—not in *all* cases, but in *some*; and in *very many*, it may be added, if the treatment employed be rational and in accordance with the indications of nature. Among the authorities which may be cited in favor of the curability of consumption are such names as those of Laennec, Louis, Andral, Carswell, Watson, and in America those of Rush, Eberle, Dunglison, Wood, and Swett. The London *Lancet*, the *British and Foreign Review*, and many other medical publications of the highest character, have taken the same ground.

The authorities here presented are very high, and their testimony is clear and unanimous. They are men who have been actuated by no selfish motives in making the declaration, but by a benevolent wish to secure the good of the race. Yet I am sorry to add that we must, on the very score of their exalted benevolence, make some deduction from the very confident assertions of the

curability of consumption which they have left us. Not that I would argue that consumption is incurable, for such is far from being my belief. But I am convinced by actual observation of the course of this disease under all forms of treatment, and under no treatment at all, that when the disease has advanced to its last stage, the proportion of cases cured *is not so great* as that stated by the authors whose names I have given.

But it will be well to inquire *by what means*, and *from what condition*, a cure is possible.

First, then, the medical authorities whose names we have given do not claim that consumption is curable by the use of medicines given by the stomach. The hope of the profession, in consumption, has long been confined to the known tendency of unaided nature often to work a cure where all medication has failed, to a change of climate, to strict employment of pure air, vigorous exercise, and a supporting diet, or to those "fortunate accidents" of which every physician can detail instances that have come under his observation. If consumption has been cured, it has not been by the power of medicine; for it is absurd in the nature of the case to suppose that by acting on the stomach or the blood we can affect tubercles that have long since passed beyond the reach of both the stomach and the blood!

Secondly, the cure of consumption, when it takes place, can not be by the restoration of parts that have been lost. If a portion of either lung has been destroyed by ulceration, and *spit up* as it must be, in that case, in the expectoration, it can never be reproduced again. The substance of the lung once destroyed, can no more grow again than an arm after amputation. All that has been lost by the disease remains lost; and as this may be an entire lung, or a large part of both, it may follow in such cases that the patient must gradually perish for want of breath, even though all the tubercles in his lungs might have been previously removed by expectoration. There are instances, however, in which it is probable that life is sustained by the use of one lung alone for many years, the air-cells of this lung probably becoming enlarged after the destruction of its fellow.

Thirdly, I have reason to doubt whether cavities of considerable

size, once formed in the lungs, are ever healed. Cavities of small size may close up, and of this we seem to have evidence in the *scars* found in the lungs in many *post-mortem* examinations. Yet I am inclined to believe that many of these supposed scars, instead of being in the substance of the lung, are really situated on its surface, and are instances of adhesions and contractions of the pleura covering that organ. These contractions may be produced by inflammation or irritation of the lung, independent of tubercles; and they are present in a large majority of all the cases in which examination is made after death. But although larger cavities are seldom, and perhaps never healed, yet it seems very certain that the discharge from them may in great measure cease, the cavity may diminish in size, its sides may become healthily moist, or discharge very slightly, like an old ulcer upon the limb which almost heals; and if in this condition the patient takes sufficient air and exercise with nutritious food, and other crops of tubercles do not ulcerate, life may be prolonged with a good degree of comfort and strength, and that for many years.

Fourthly, tubercles are never absorbed. This is certain from the facts that few, if any, absorbent vessels can be formed in the lungs, and that tubercle once deposited so soon takes on a solid form, and its material becomes of so heavy and dense a nature, that a return into either absorbents or blood-vessels becomes impossible.

Finally, there is abundant evidence that tubercles in the lungs may remain *dormant* or asleep for many years, in some cases through an ordinary lifetime. They are there, but the particular circumstance or combination of influences not occurring to call them into activity, they remain passive, and, if not very numerous, produce no sensible effect on the general health. Besides, as we have seen, tubercles may sometimes soften and be discharged without producing large cavities, and the lung may regain a healthy state. And again, there is a transformation of tubercles that sometimes takes place in the lungs, and by which they are rendered entirely *harmless*. This fortunate change is a conversion of the tubercles into small round lumps of a *chalky* material, which, strange to say, no longer irritate the lungs; and hence this may be considered as one of nature's methods of curing tubercular consumption.

For myself, I am prepared to affirm that *consumption is curable*. Not that we can as certainly predict a cure in every instance as in many other diseases, but if the right treatment be commenced at an early enough stage of the complaint, and the patient be subjected to the right influences, in connection with the many ways in which, as we have seen, tubercles may be removed or rendered harmless, the chances of a cure are very considerable, and they should encourage the patient to unremitting and judicious endeavors to secure the return of health.

The error of treatment in the past has been first, in the means, and secondly, in the mode. When the former have been correct, the latter has been erroneous; and more commonly both have been so at the same time. But consumption is better understood now than it was a few years past, although it is true that all controversy respecting the disease is not yet settled: I have been thus explicit in regard to the curability of consumption, in order to show *the solid ground of facts* on which I base the hope of success under a rational system of treatment. The reader is thus prepared to enter understandingly upon a consideration of this treatment and its results.

The Treatment of Consumption.

In the preceding chapters I have carefully described the office of the lungs, the composition of the air and of the blood, and the influence of certain agencies in altering or deranging the action of the lungs. I have considered also the causes, symptoms, and mortality of this disease, and have examined the question of its curability. I proceed, next in order, to speak of the means adapted to its alleviation and cure.

That consumption is a curable disease, the most eminent pathologists of the day allow; but the means whereby a cure can be effected have proved the stumbling-block that has rendered their teachings futile. The whole Pharmacopœia has been searched—medicines of all varieties and of every degree of strength have been

administered, voyages to all parts of the world have been ordered and made—the sunny isles of the Indies have received their thousands of invalids, anxious for a cure; Florida, with her pleasant promise of flowers and orange groves, lakes and mountains, valleys and seas, have all been invoked to the aid of the physician; but, alas! to no purpose. Death has been the great remedy in the end; and the same sad tale has been told and re-told for centuries.

Parents have seen their idols snatched from them, and no hand was nigh to help. The orator, with his commanding influence and greatness of purpose—the poet, wearing his laurel wreath and crowned with immortal honor—the poor student, haggard and pale from his books, pored over by “the midnight oil”—the humble sewing girl, who with dimmed eyes has worked the health out of her frail body—the bright beauty that flashed, meteor-like, through halls of pleasure, her cheeks flushed with the hectic hue of a smoldering fire—the miser, moping and clutching his yellow hoard with a hand of vice-like strength—all, all have sunk before the march of dread consumption! The warrior, who withstood the fiercest charge of a living foe, has fallen when consumption laid its bony hand upon him. There has been no help for the dying—little hope for the living, when the fearful sentence had been once pronounced. The family circle has been broken, the chain of love sundered forever; the stricken ones linger and hope, but onward they must still move, to swell the catalogue of death!

And yet medical science is not wholly unprogressive; something is added each year to its curative means and measures. I think that in this chapter I shall be able to convince the world that the remedies for consumption have always been at hand; but in the mode of combining and administering them has been the fatal error. In this has consisted the great want of knowledge. In my opinion there is no disease for which remedies may not be found; and certain I am that, *like all other diseases, consumption can be cured*. To the patient, procrastination is a fatal error. Time is life; and life is everything. The first cough, the first symptom, is the alarm-bell of approaching disease, and bids the patient beware ere it is too late. How often have patients come to me who have been almost drugged to death, who have lived on cod-

liver oil, who have sailed to distant lands, have spent a fortune, and at last, when it was too late for assistance, have come home to die!

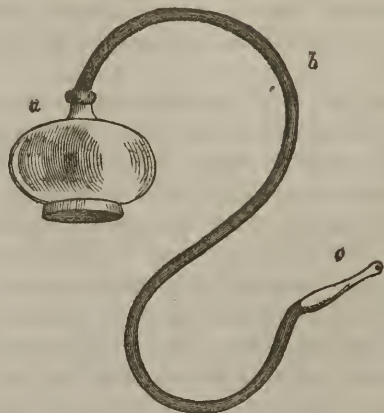
I shall lay it down as an axiom in the outset, that a *direct application* to any diseased part, of *suitable remedies*, must of necessity act more efficiently to control and remove disease, *than those means* which are applied to and *expend their energies on remote parts*.

Consumption is a local disease—a disease having its origin in a deficiency of the air-cells of the lungs, and having its seat also within and immediately about the air-cells. Yet we find that physicians have continued, year after year, to *pour medicines into the stomach*, in the hope of thereby reaching and curing diseases of the lungs. It is well known that the blood becomes impure in consequence of breathing an impure atmosphere, or of partial closure of the air-cells, preventing the proper purification of that fluid. But the blood that has become impure by reason of *bad air or imperfect lungs* must certainly become pure by means of *wholesome air and vigorous lungs*, or not become pure at all. In fine, it is only by enlarging the air-cells, so that they may admit more air, by invigorating the lungs, by dissolving those tubercles which fill a portion of the air-cells, and then by furnishing to those organs a pure air, and supplying healthful, nutritious blood, by means of proper food, that we can hope to cure consumption. And independently of proper air and food, it is evident that all the results to be aimed at for the cure of this disease are best secured by the *inhalation* of suitable remedies, thus bringing them to act directly on the parts diseased.

Are not the diseases of the eye treated by local application? Are not external injuries treated with promptitude and success? And why, but that we are able to make our applications of remedies directly to the parts involved in the difficulty. How strange, then, that we persist in introducing medicines into the stomach, in the hope of curing diseases in the lungs! I object more strongly to the method of using the remedies employed for these diseases, than to the remedies themselves. Many of the remedies possess virtues of the highest importance, but they have been sadly misused.

And how easy it is, by the use of a suitable inhaler, to bring the proper remedies into the lungs themselves, and in direct contact with the seeds of consumptive disease, and with the surfaces that are inflamed by their presence !

Fig. 5.



The Inhaler; Method of Inhalation.—In the method of inhalation which I have adopted, the articles to be inhaled are first dissolved in pure deodorized alcohol, and diluted to the proper point with the same fluid. The inhaler (fig. 5) consists of a small glass globe (*a*) with two openings, to one of which is attached a flexible tube (*b*) with an ivory mouthpiece (*c*). A fine sponge, moistened with about two teaspoonfuls of the liquid to be used, is introduced into the globe of the inhaler. The patient inhales through the sponge successive inspirations of air, which has become perfectly saturated in its passage with the vapor employed. From five to fifteen or twenty slow, deep, and full breaths are thus drawn, each being retained a short time before expiration. The strength of the vapor can be perfectly regulated for each case; and it is uniform through each period of inhalation.

The inhaler now described is entirely new, both in principle and in details. It is convenient, and may be carried in the pocket, to be used when walking, riding, or traveling. Its greatest excellence, however, consists in the fact that the vapors inhaled through

it always enter the lungs at the *natural temperature* of the surrounding atmosphere. The medicinal vapors coming in contact with the lungs are thus *neither cold nor hot*, but of the same temperature (whatever that may be) with the air which the patient is breathing at the time. Hence these vapors have their full effect medicinally, without being liable at the same time to weaken or irritate the lungs by unnatural coldness or heat. And this is a great point gained, as every reflecting mind will at once perceive, in the treatment of all pulmonary diseases. It is a point which has never before been attained, or if attained, has never become known to the profession and the public.

The advantages of this method of inhalation in almost every instance, over that by *hot water*, must be at once apparent. This method gives us the ordinary process of breathing, with the addition of stimulating, soothing, or healing qualities to the air inspired. For proofs of the efficacy of this treatment, if any are desired beyond the rationality of the method itself, the reader is referred to cases reported in this book, and to the testimony of hundreds of physicians throughout the country who have witnessed or tested its success.

General Indications of Treatment.—From the views which I have laid down respecting the causes of tubercular consumption, and the manner in which these causes act to produce tubercles, and finally ulceration of the lungs, it will be seen that when the stage of breaking-down has occurred, the oxygen of the atmosphere is combining too rapidly with both the lungs and the fatty and other tissues of the body. So surely, then, as we can introduce into the system a sufficiency of *combustible material*, or carbon, in a volatile form, for which oxygen shall have a greater affinity than for the tissues of the body, while at the same time vapors which possess *solvent* or other medicinal powers, according to the state of the diseased parts, are introduced into the lungs, so surely can we stay the destructive progress of consumption. And this, as I shall proceed to show, can be done.

The three main features of my treatment are, therefore—*first*, that the remedies on which I rely chiefly for a cure, are applied directly to the seat of the disease; *secondly*, that no drugs are pre-

scribed or allowed to be taken into the stomach; *thirdly*, that in the later stages a free supply of carbon is constantly introduced into the system. And a further principle which is never lost sight of, may be stated in three words: SUPPORT, NOT REDUCTION.

Two objects are kept constantly in view: *first*, such remedies are used by inhalation as by their chemical affinity for the substance of tubercles, help to dissolve these bodies, and so favor their removal by expectoration; *secondly*, measures are adopted to prevent the further deposit of tubercles.

That alcoholic vapor will act upon the matter of tubercle as a *solvent*, there can be no doubt when we consider the chemical nature of the two substances. And besides, when the substance of tubercle is placed in alcohol, a gradual solution of it really takes place.

To prevent the further deposit of tubercles, I rely upon increasing the capacity and power of the lungs by the mechanical effects of inhalation, upon the stimulating effects of the vapors inhaled, and upon the invigorating qualities of a generous diet, combined with active exercise, pure air, and the use of alcoholic drinks.

The Remedies Employed.—The vapors prescribed in my treatment are chiefly of four kinds—expectorant, anodyne, astringent, and asthmatic; of each of which there are different varieties, to meet the indications of particular forms and stages of pulmonary disease. To give special directions in this place for the use of these vapors would occupy too much space; and besides, this can not well be done, except in the particular cases, as they present themselves.

For the inhalation of these vapors, *pure deodorized alcohol*, as already mentioned, is the menstruum invariably employed. The advantages of this medium are many. In the first place, alcohol is more volatile than hot water, and those substances which it dissolves are more easily volatilized than any aqueous solution can be. Besides, alcoholic vapors are lighter, and more easily penetrate the air-cells of the lungs. Alcohol is itself of such a nature as to act as a solvent for tuberculous matter, and it is one of the best forms in which carbon can be introduced into the system. And finally, there are many substances which are valuable when used by inha-

lation, but which only imperfectly yield their virtues to hot water, while they are perfectly soluble in alcohol.

Among the remedial agents administered in the form of vapor, in connection with the vapor of alcohol, are the following: nitric, benzoic, acetic, and tannic acids; the oil of bitter almonds, the tinctures of tolu and sanguinaria, Donovan's solution, spirits of ammonia, gum camphor, arsenic, balsam of fir, creosote, and chloroform.

Among these articles I have found the vapor of *dilute nitric acid* to be, in cases of advanced consumptive disease, the most potent and effectual. Indeed, the same may be said of this agent in almost all forms of pulmonary and throat diseases; and this is, accordingly, my chief reliance in inhalation. The solution employed is from twenty-five drops to one drachm of the officinal acid to from six to eight fluid ounces of alcohol.

The employment of nitric acid in the way of inhalation I believe to be entirely new. The benefit derived from the nitrate of silver, used as a caustic, constitutes a strong argument in favor of the nitric acid, since the cauterizing effects of the nitrate (*lunar caustic*) are undoubtedly due, to a great extent, to the acid contained in it. This opinion I have verified in practice, by obtaining more marked and successful results from the application of dilute nitric acid to ulcerations of the throat, than from the popular caustic, the nitrate of silver. Thus, by the inhalation of nitric acid vapor, I introduce to the surface of cavities in the lungs the same *caustic* applications that I find most effectual when applied to an ulcerated throat.

It will be acknowledged by the candid reader, I think, that the mode of treatment here laid down is *not* mere routine. As carried out by me in the New York Lung Institute, it applies to each case remedies adapted to the particular form and stage of the disease present. Nor do I claim that *local* remedies, necessary as they are, will alone effect a cure. The "*vis medicatrix naturæ*" (*healing power of nature*) is the great reliance of every intelligent physician; and in applying remedies locally, I only claim that they are such as to aid in the very work which nature is striving to perform.

Hence active treatment of any kind is not the sole reliance of my system of treatment. The cases here presented are, almost

without exception, those of a long-standing chronic character, and in tuberculous subjects, too often in the last stages of the disease. In all these cases, I insist particularly on *hygienic measures*, such as the free use of active exercise, pure air, and a nourishing and generous diet.

In a disease so wasting and debilitating as consumption, a large supply of the nourishing principles of food must be furnished to the patient, in order to sustain the strength, and to assist Nature in her struggle against disease. I accordingly advise the free use of beef-steaks and brandy, and such other highly supporting forms of food as are in general use. In regard to the efficacy of brandy and other spirituous liquors I shall speak in a separate section devoted to that subject; but in support of their use I may here call attention to the facts, that very few habitual drinkers are ever found to die of consumption, or upon examination made after death, to exhibit tubercles in the lungs.

I take from the excellent treatise of Pereira on "Food and Diet," the following list of highly nutritious articles of food, in accordance with a promise given in a previous part of this work. The really nutritious part of food (that which goes to *furnish blood and muscle*, and not that which supplies carbon for the *fuel* of the system) is supposed by the physiologists of our day to consist of the following substances: fibrin, albumen, and casein. These are to be met with in the articles of food below named, and in the proportions given in the table:

In Beef	20	parts in	100	In Wheat flour ..	9 to 25	parts in	100
" Mutton	22	"	"	" Rye	8 to 10	"	"
" Pork	19	"	"	" Oatmeal	14	"	"
" Chicken	20	"	"	" Peas & Beans	14 to 22	"	"
" Eggs	17	"	"	" Rice	4	"	"
" Codfish	14	"	"	" Indian corn...	3	"	"
" Cows' milk	5	"	"	" Potatoes	3	"	"
" Goats' milk	4	"	"	" Beets.....	1½	"	"
" Cabbage	8	"	in 1,000	" Onions(dried)	25	"	"

Lobsters, oysters, and other shell-fish are also highly nutritious.

Some of the articles named in the table are not desirable food for the consumptive, on account of their indigestible character. Among these is pork; and from the fact of its tendency to pro-

duce scrofula it should be wholly discarded. The most eligible forms of food in the above list for the consumptive invalid are, beef and mutton, when lean and tender; chickens, oysters, and eggs; milk, if it does not occasion fever; bread, home-made, and *not too stale*; beans, potatoes, and onions. Vegetables can not be entirely dispensed with, from the fact that, although not so nutritious as flesh and eggs, their use helps to keep the stomach and blood in a good and vigorous condition.

When we consider the unfavorable character of the cases on which this system has of necessity been tested, and those who have tried the whole round of the prevailing modes of treatment without benefit, and often with direct injury, we shall be prepared to appreciate the merits of a system so often successful (as the cases yet to be reported will show) in arresting the progress of consumption, and restoring the invalid to a state of health. The fruits of this method of practice are the most unanswerable arguments in its favor.

It will be seen that the remedies employed by me in the treatment of this disease are numerous; and it may be added that they are never prescribed without a full understanding of the history of the case presented, nor otherwise than in strict accordance with its symptoms.

In the early stages of consumption, and before softening has occurred, inhalation and the other agencies already named are employed with some modifications. The vapor of arsenic is prescribed, and also that of nitric acid, but of less strength than in the later stages. The chief reliance at this period of the disease is, however, on the constant inhalation of alcoholic vapor from a sort of jacket worn upon the chest, and kept constantly wet in diluted alcohol, day and night. Dr. Marshall Hall, who has given to this application a persevering trial, is very enthusiastic in its praise, and declares that he has witnessed greater benefits from its use in the early stages of consumption than from all other remedies combined. Alcoholic drinks are also recommended, but in more moderate quantity. Active and thorough physical exercise is insisted on, and no internal use of drugs is allowed. A generous diet is recommended, with the rejection of all forms of fat.

I have thus laid before the reader a brief view of the principal features in the treatment I have adopted in the various diseases of the lungs and throat. This treatment I have, up to this time, applied in hundreds of cases, and with the most gratifying results. It is a mode of practice which relies on remedies acting in harmony with the known laws of human physiology; and it is not strange, therefore, that a more marked success should attend its use than has fallen to the lot of any previous method of treatment in these diseases.

It has been seen that the remedies named are such as aim at a *radical cure*, instead of being, as too many pretended remedies have been, mere *palliatives*; and yet, where the relief of urgent symptoms is required, or palliation is all that can be hoped for, the medicated vapors, properly modified and applied, prove to be all the physician could desire. Every needful effect, too, ordinarily sought by means of medicines introduced into the stomach, can be much more directly and satisfactorily secured by the inhalation of the medicated vapors. Thus, an expectorant, anodyne, stimulant, tonic, astringent, or relaxant effect is directly and speedily obtained, without the delay consequent on the passage of medicines from the stomach into the blood.

Of Bronchitis.

BRONCHITIS is, strictly speaking, an inflammation of the lining membrane of the bronchial tubes, and hence has its seat within the lungs. It is nothing more nor less than a "cold on the lungs," a complaint which is very common in winter and spring in temperate climates, so much so that few persons escape without having one or several of these attacks in the course of the cold months. Thus the disease is simple in itself, and from being common is generally well understood.

The nostrils, the throat, the windpipe (or trachea), and bronchial tubes are lined throughout by one continuous membrane, similar to that which may be seen lining the inside of the mouth; and it is

this large extent of membrane that is almost always the seat of a "common cold." When as we say the cold settles "in the head," the difficulty is called *catarrh*; when it affects the upper part of the throat, and especially the tonsils, it is termed *quinsy*, or *tonsillitis*; if seated upon the lining of the larynx, or upper part of the windpipe, it is known as "*sore-throat*," or *laryngitis*; occupying the lower part of the windpipe, *tracheitis*; and when confined to the lungs, *bronchitis*. Yet it is very common to term the disease *bronchitis*, even in cases where it extends throughout the throat, windpipe, and lungs. My subject in this place is bronchitis; the other diseases named will be described subsequently.

The first symptom of a cold seating itself on the throat or lungs is generally a sense of chilliness, or perhaps a severe chill, attended with sneezing and cough, and with a feeling of dryness in the nose and throat, and followed by more or less fever. The natural secretion from the membranes involved is checked at first; and hence the sensation of *dryness*. If there is cough at this stage, it also is "dry;" that is, there is no expectoration. There is often at the same time a feeling of heat and soreness in the throat. But soon the inflamed membrane begins to throw off an increased amount of secretion, at first a thin, acrid fluid, or a tough and transparent mucus which can not be dislodged without severe coughing. After from four to seven days the expectorated matter begins to change to a yellowish and heavy appearance, owing to the fact that it is now mixed with *pus*, or "matter," which forms and is raised freely during what is called the "breaking up" of the cold. The cough is now said to be "loose;" and with proper care the disease generally progresses favorably from this point, and in from one to three weeks the patient is restored to his usual health.

In this complaint there is seldom much pain in the chest, unless it be a feeling of *dull pain* or *soreness* after severe coughing. Owing to the inflammation present, however, the lining membrane of the parts involved swells or becomes thickened, and by this swelling, as well as by the collection of mucus in the smaller bronchial tubes, many of the air-cells become closed. Hence the shortness of breath that often attends this disease; while if the patient attempts to relieve this by taking a full breath, the swelling

of the membrane obstructs the passage of air, and the difficulty may thus resemble a severe attack of asthma. It is by this closing of the air-cells with mucus, as I have elsewhere explained, that an attack of bronchitis, especially if long continued, often produces in the end a deposit of tubercles in the lungs.

In the acute form, bronchitis seldom proves fatal, unless from improper treatment; except in the case of very young children, who can not always clear the lungs by expectoration. No disease is more liable, however, to become chronic; and in the chronic form it may continue for years, giving place on any slight exposure to an acute attack, or finally growing unmanageably severe, and ending in death. In very old persons this result is particularly liable to occur, the disease being attended with excessive expectoration of a watery or frothy mucus, which finally accumulates until the patient is literally strangled by it.

The *causes* of bronchitis are well understood. Exposure to severe cold or to a draft of air, wet feet, and various excesses, are the most frequent. Other diseases may produce or favor an attack of bronchitis. Such are some heart-diseases, dyspepsia, but especially *tubercles* in the lungs, as has been already explained.

The *treatment* of bronchitis is simple. In the acute form of the disease, food and exercise should be almost entirely laid aside. Thus no more fuel should be added to the fire, and it will burn more quietly, and go out the sooner. The inhalation of the vapor of warm water proves beneficial in this stage, by soothing the inflamed surfaces of the bronchial tubes. But evidently *the best way to cure a cold is to take no addition to it*, to preserve quietness, and to keep down inflammation by eating little.

Chronic bronchitis, however, requires a thorough and energetic course of treatment. In this form of the disease the inhalation of the "medicated vapors," suitably modified, proves efficacious and satisfactory. Pure air, exercise, generous diet, and cheerfulness are necessary auxiliaries.

Long-continued bronchitis is always a source of danger. The membranes go on thickening under the influence of continued inflammation; the air-cells become more and more obstructed; the blood consequently is not properly purified; an excess of carbon is

retained in the system; the complexion becomes pale or livid; the strength fails; feverishness toward evening or in the night becomes a common symptom, and this may be followed by hectic and "night-sweats." All the conditions necessary to the production of tubercles are present, and in the end a deposit is very certain to take place, and consumption is the finale of a scene of suffering. Thus we have seen that bronchitis may be merely a symptom of consumption; and that where the latter disease does not exist, the former almost certainly establishes it.

The importance, therefore, of giving early attention to a *chronic cough*, of whatever nature it may be, is always pressing. Patients are often deceived by their physicians, perhaps innocently, into the belief that their cough is merely a "stomach-cough," or arises from irritation of the liver. But let such remember that the stomach never coughs, nor does the liver. The lungs only cough, and when cough is present one of three conditions must exist to account for it. Either the lungs themselves must be diseased, or the difficulty exists in the throat, and the lungs are affected through sympathy (and in the end they are almost certain to become diseased themselves, through the same medium); or, lastly, as all organs are more or less under the control of the nerves, in a very few cases the cause of cough may be wholly in a disordered state of the nerves, and the patient may have what should properly be termed a "nervous cough." This will chiefly be found to be present in the case of hysterical females; and yet even here it may be associated with an actually diseased state of the lungs. The simple lesson which we learn from all the facts that can be brought to bear on this important subject is, never to rest quiet under a continued cough. Innocent as it may appear, we can with no more safety allow it to linger about the seat of life, than we could with impunity harbor an assassin in our bed-chamber or cherish a viper in our bosom!

Of Catarrh, or Cold in the Head.

TRIFLING as this complaint is usually considered to be, it can not be deemed unworthy of a place in a medical treatise, if we take into account the serious consequences to which, like all other diseases of that expanse of mucous membrane extending from the head to the lungs, it may give rise. "From the cradle to the grave" no other form of malady is so common as this, so that what was said in regard to the frequency of attacks of bronchitis applies with still more force to catarrh. The person who passes the winter and spring without a "cold in the head" is looked upon as in some sort a prodigy; and many have these attacks even in warm and agreeable weather—a fact, by the way, which proves that *cold* is not their sole cause.

Ordinarily, indeed, a cold in the head may be considered of no great importance; for it is not true in a majority of cases that it takes the chronic form; and it is when severe and often repeated, in a constitution which is breaking down under exposures or severe labor, that it becomes liable to pave the way for fatal disease. Under such circumstances, or when catarrh has become chronic, every *fresh cold* should be regarded with suspicion; its recurrence should be prevented if possible, or otherwise it should be faithfully nursed and speedily removed; for if allowed to progress unrelieved, every such attack but drives "another nail" in the patient's coffin!

The causes of catarrh are generally well known. Exposure to cold and dampness, wet feet, a draught of air, insufficient clothing, especially if these influences act on the system when in a fatigued and exhausted condition, or after excesses at the table, must generally bear the blame of our numerous "colds." Excesses alone often establish a regular attack of this kind; and a very slight exposure is sufficient when the vital powers are low. From these facts it is evident, that of no disease are the causes more completely under our control than in the case of "colds;" and mankind have only to exercise a fair share of prudence and judgment to escape almost entirely this now constant annoyance.

An attack of cold or catarrh generally begins with chilliness, perhaps shivering, with flashes of heat, dryness of the nostrils, or sneezing and discharge of thin acrid mucus, with headache, and finally feverishness. The secretion of mucus, as in bronchitis, is apt at first to cease, and then to become profuse and watery, and finally heavy and yellow, a state of things which shows the "breaking-up" of the cold.

A neglected attack of this kind, especially if the general health is feeble, is very apt to become chronic, when it is at the least very annoying and difficult of cure. Another tendency is to "travel down," as it is expressed, first affecting the throat, so that the patient will have chronic catarrh and sore throat together, then extending down the windpipe until it gains a hold in the lungs, and the whole extent of this membrane is diseased. Bronchitis is thus added to the previous complaints; but besides, it is a fact which has often been observed, that where the disease takes this course, it is particularly liable to end in establishing tubercular consumption.

Of the treatment of a simple case of acute catarrh, little needs be said in this place. "Let alone," "cut off the supplies," dress warmly, rest, and live lightly, are the best directions that can be given. If the attack is often repeated, or unpleasant symptoms show themselves, extra care both to remove and to prevent should be practiced. When disease becomes chronic, mucus being continually discharged either by the nostrils, or, as sometimes occurs, backward into the throat, it is readily cured, and perfectly so, by the injection of appropriate fluids into the nostrils by the use of a nasal showering syringe, of which a cut is elsewhere given. In connection with this treatment, a supporting diet and active exercise will contribute to make the cure permanent, and to restore the vigor of constitution necessary to guard against a fresh attack.

Of Laryngitis, or Sore Throat.

STRICTLY speaking, laryngitis is an inflammation of the lining membrane of the larynx, or *vocal box*, which is the enlargement of the windpipe at its upper extremity, and which may be seen and felt externally, constituting the projection in the neck known as "Adam's apple" (*pomum Adami*). What is termed "sore throat" usually affects the posterior part of the mouth, just above the vocal box, and generally affects also the membrane within the larynx. But the two complaints are so near in location, and in their causes, symptoms, and required treatment, that they may properly be described under one head. By laryngitis, then, we may understand what is termed "common sore throat," as well as "clergyman's sore throat;" while it is an inflammation of the same part, though of a different character, which, in children, constitutes *croup*.

Like most other inflammations, acute laryngitis is apt to commence with "chills," followed by feverishness, with dryness and heat in the throat and within the larynx. The membrane inflamed is tender and considerably swelled, producing difficulty of swallowing, and a feeling of soreness and tightness in breathing. There is apt to be a wheezing sound accompanying the respiration, which, if the difficulty be not removed, grows gradually louder, while the act of breathing becomes to the patient more painful and difficult. From the inflammation extending over the vocal chords, the patient becomes hoarse, and the voice may sink to an almost inaudible whisper. The cough is loud, often hoarse and "barking." In this state of things, the supply of air to the lungs is necessarily diminished more and more, and the sufferer becomes restless, tossing about in the bed; while from want of a due change of the blood in the lungs, the face and hands begin to show a livid and purple hue. The patient now gasps for breath, the mental faculties become clouded, a state of *stupor* comes on, and if relief be not at hand, the "death rattle" finally announces the period which terminates the disease in *strangulation*.

The causes of this disease are, as in other forms of "colds," to be found generally in cold and dampness. By frequently speaking for a long time in crowded and unventilated rooms, and then exposing themselves perhaps to a cold atmosphere, clergymen are liable to weaken and irritate the throat and larynx to such an extent, that very obstinate and severe laryngitis is often the result. The wearing of very warm or rigid cravats is another means of weakening the throat and inducing the disease.

It will not be necessary to speak at any great length of *tracheitis*, or inflammation of the windpipe, as this disease seldom occurs alone; and whether it does so occur, or simply as an extension of laryngitis, its treatment is the same as that of the latter disease.

It has been of late very common to cauterize the throat in this disease, by the application of a solution of nitrate of silver with the *probang*. Certainly some local treatment is necessary, or we can seldom look for relief. For the application of a caustic solution to the throat, larynx, or trachea I prefer the showering syringe, described farther on, by which a fine shower can be thrown directly on the diseased surface, without chafing and irritating it, as is done by the *probang*. In connection with this measure, rest, with very light diet, should be enjoined; the general surface should be sponged over with tepid water, and applications should be kept up to the throat of cloths frequently wrung from ice-cold or from hot water, according to the judgment of the physician in attendance. Of the treatment of croup, which is a disease coming wholly within the general practice of physicians, it is not my purpose here to speak.

The *chronic* form of laryngitis is much more common than the acute. It may result from an acute attack, or it may, and in our country more commonly does, come on gradually without being preceded by the acute form.

In chronic laryngitis the cough may be very slight, or it may be severe in paroxysms; but it is not apt to be so continually severe as it often proves in diseases affecting the lungs. It is generally short, or hacking; and from slight swelling of the membranes, both the cough and the breathing are often accompanied by a whistling sound. There is one point respecting the cough which distinguishes it from that attending disease of the lungs, namely, that the former

is *voluntary*—the patient coughs purposely, to remove the mucus which collects in the throat; whereas in consumption and bronchitis the cough can not be wholly controlled, and the patient coughs because the internal irritation compels him to cough. With the cough there is a sense of tightness about the throat, and there may be great difficulty of breathing, occurring in paroxysms which resemble asthma.

Fig. 6.



EXPLANATION.—The upper part of the figure shows the inside of the larynx, or vocal box, just behind the projection known as Adam's apple; the lower part, the inside of the trachea, or windpipe. The dark spots in the center of the larynx show the situation of the vocal chords, by which the voice is produced; the irregular openings below, *ulcers* upon the mucous membrane. The cut ends of the cartilages which assist in forming the larynx and trachea, and which, being firm, prevent a collapse of the sides of this important tube, are seen in the white substances along the sides of the figure. In the condition of the parts here represented, especially when the ulcers make their way into the vocal chords, the voice is partially or wholly lost.

These symptoms are often attended with ulceration of the throat, the ulcers being smaller or larger, perhaps very numerous, and extending through the mucous membrane, or even deeply into the parts lying in connection with it. Ulceration is particularly liable to occur in scrofulous subjects, or in those whose systems suffer from a *venereal* taint, and in the latter it is especially obstinate,

being often almost incurable. It may attend any case in which the powers of the system are very greatly reduced. Of course, the expectoration will vary according as ulceration is or is not present. It may be a tough mucus which is hard to remove from the throat, or a mixture of mucus and pus of a yellowish appearance, and much resembling that from the lungs; or almost pure matter, and streaked with blood, from deep ulcers; or, finally, made up of a mass of small softened bodies, like millet-seeds, which come from the ulcerated follicles of the mucous membrane. There is often hoarseness in this disease, and sometimes ulceration of the vocal chords proceeds so far that, although the disease may be cured, the voice is permanently impaired or lost.

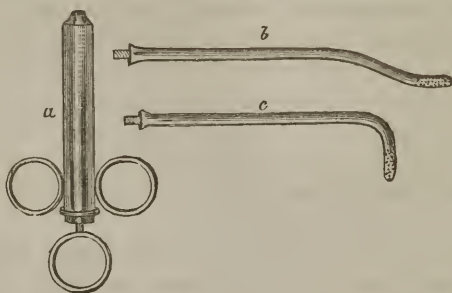
Laryngitis in a chronic form, as I have already stated, often attends consumption; and in this case, generally accompanied with hoarseness, it may recur in a somewhat acute form several times during the course of that disease, or may attend it steadily throughout its course. In this case there is no hope of cure of the throat except in the removal of the disease of the lungs.

Chronic inflammation and ulceration of the throat or trachea, as well as of the membrane lining the nostrils, is treated with perfect success by the use of the nitric acid, astringent, and other solutions. These are introduced to the diseased surface by means of appropriate showering (silver) syringes, invented by myself. In practice, the syringe proves far superior to the *probang*, since the latter, being larger, completely cuts off the passage of air during its application, and by its roughness excites spasm and a temporary strangulation. The syringe being a smaller body, with an even and polished surface, passes easily through the *rima glottidis* (the opening from the mouth into the larynx), and its momentary presence in the trachea occasions nothing like spasm, the air passing freely around it. Another advantage of the syringe is, that it conveys the fluid used safely to the desired point, and may then be discharged; whereas, in attempting to pass the *probang* into the trachea, much of the solution it holds will be pressed out in forcing it through the glottis.

The most convenient form of showering syringe is that shown in fig. 7. It consists of a barrel (*a*) somewhat larger than the instru-

ment known as the female catheter, with two bulbs of different curves, either of which may be screwed to the barrel after it has been filled with the liquid to be employed, and which, being per

Fig. 7.



forated with holes, upon forcing the piston down, throw a fine shower of the liquid in all directions. The bulb (c) is for the posterior nares (nostrils), that marked (b) for the trachea. The entire instrument is of silver.

It has long been a question whether an instrument could be made to enter the larynx and trachea. The practice of Dr. Horace Green with the probang, and my own practice with the showering syringe, have set this question at rest. Either the instrument used by me does enter the trachea, or else the passage of such an instrument into the esophagus (the food-pipe, or duct leading to the stomach), as has recently been well remarked by one of our medical journals, *does cure* diseases situated in the larynx and trachea. The latter supposition is absurd; and therefore we have no choice but to admit the former to be true.

The general treatment of chronic sore-throat should be similar to that of the chronic forms of the other diseases already named. Hygienic measures must be strenuously carried out; and instead of the spare diet adapted to the acute form of the disease, a generous, warming, and sustaining diet is to be recommended, but this should not be carried to the point of increasing fever.

While speaking upon the subject of disease situated in the vocal chords, I may add that these delicate and important parts are some-

times affected with palsy, so that the voice may be wholly lost without the destruction of any part of their substance, but merely from a loss of nervous and muscular power. In this difficulty the inhalation of stimulating and astringent vapors, in connection with exercise and strengthening of the general muscular system, will prove among the most effectual remedies.

Of Tonsillitis, or Quinsy.

THE tonsils are two almond-shaped glands, situated on either side of the fauces (or throat, the passage leading from the mouth to the larynx and esophagus, which are situated below), being just under the lining membrane of the part, and in health forming only a slight projection upon the surface. When inflamed, these bodies swell, and protruding from the two sides may almost close the passage from the mouth, thus producing, according to the amount of obstruction, more or less difficulty of swallowing and of breathing, and sometimes by complete closure, causing, unless relief is obtained, strangulation and death.

Tonsillitis, commonly called quinsy, is an inflammation of these bodies; and when not confined, as it is in its milder forms, to the surface, but extending deeply so as to affect the parts beneath and surrounding the glands, it produces in an aggravated form the difficulties already named, and is in a high degree dangerous. The first symptoms of the disease, which is generally brought on in scrofulous subjects by *cold*, and in plethoric constitutions by *excesses in diet*, is a feeling of dryness and heat in the throat, with an uncomfortable sensation as if a *foreign body* were to be found there.

The dryness of the tonsils and throat is followed by a discharge of a clear, adhesive mucus, which, together with *saliva*, may flow in large quantities. There is pain shooting through the "Eustachian tubes" to the ears, together with more or less deafness from closure of those tubes. Fever is apt to be high, and accompanied with

violent headache. Frequently the jaws are opened with great difficulty. The disease at this stage may terminate either naturally or by the proper treatment, in the way termed *resolution*, or "breaking up," that is, without going on to the formation of matter. On the other hand, an abscess may form in the tonsils, or in the inflamed parts beneath; and when this breaks of its own accord, or is opened by the use of an instrument, it discharges freely, and the patient then very rapidly recovers his health. Or finally, the disease may extend deeply, perhaps into the larynx; and from the amount of swelling, the patient is brought into an alarming condition. The countenance becomes anxious, the breathing extremely difficult, the surface livid, and death may rapidly ensue.

This disease may return frequently in those who have once suffered from it. In fact, there is in many persons a sort of predisposition to quinsy, and its visits prove to such very annoying.

It is not necessary that I should go at great length into the treatment of acute tonsillitis, as this disease must usually come under the care of the general practitioner. In connection with remedies to keep down fever, stimulating applications may be made to the neck, or if there is much heat there, cloths wrung from ice-water may be put on and frequently changed. At the same time warm anodyne or soothing vapors should be freely and frequently inhaled, directing the vapor as much as possible against the tonsils and throat.

Chronic Disease of the Tonsils is very liable to occur in persons of a scrofulous habit of body, and may take either the form of a low *inflammation* or of *enlargement*, both of which may be attended with *ulceration*. In enlargement, which is the more common, the throat is found to present two large, irregular prominences, projecting in the seat of the tonsils, and partially closing up the passage to the fauces. The surface of the tonsils is frequently puckered with scars of old ulcers, or broken with ulcers which are open. Enlargement is rarely confined to one of the tonsils. Difficulty of breathing and swallowing, and partial deafness, are commonly the results of the obstruction produced by this disease.

The remedies besides those which tend to build up and strengthen

the general system, are the inhalation of stimulating, astringent, and anodyne vapors. When the enlargement of the tonsils is great, it is necessary to remove those bodies; and this is easily accomplished by the use of the tonsil instrument.

Elongated Uvula, or Palate.—From the effects of an attack of quinsy leaving behind it a degree of irritation, or from any chronic inflammation of the throat, the *uvula*, or *soft palate*, may become enlarged and hardened; or, on the other hand, it may become relaxed, flabby, and elongated to a point, as in some forms of disease the tongue is seen to be when protruded from the mouth. In either case the tip of the palate drags upon the very sensitive surface of the *epiglottis* (or cartilage, which covers during swallowing the opening into the windpipe), and this produces *cough*, just as any other foreign body would do. The continued friction of the palate upon a surface not designed for such contact gets up inflammation about the epiglottis, and this may extend downward into the larynx; and in many cases the cough attending it is as severe and alarming as that of bronchitis or consumption.

This cough is sometimes found to cease when the patient lies down, unless he lies upon the back, the reasons for which will be obvious at once. Yet so great is its severity in most cases, that the patient loses flesh and strength, becomes pale, and appears to be in a state of *hopeless decline*. The fears he is led to entertain are not wholly groundless; for if the cause of irritation be not removed, no fact in the science of disease is more certain than that this continued irritation with protracted exhaustion will extend the diseased condition down into the lungs, and eventually result in consumption.

Yet of all diseased conditions, if taken before it has led to more fatal difficulty, this is most easily cured. If the palate is simply relaxed, astringent and stimulating gargles will often restore it to its natural condition. But whether relaxed or enlarged, a certain cure is found in removal. The operation is easily performed, and without danger. The end of the palate, half an inch or more in length, is cut off with a pair of sharp scissors, or with instruments intended for the purpose. There is no hemorrhage; and with proper diet, exercise, and air, the patient at once recovers his health.

Of Asthma.

ASTHMA is a disease which consists in a *great difficulty of breathing*, occurring in paroxysms, attended by wheezing, going off with slight expectoration, and generally without fever. The disease is not a common one, but is in the highest degree distressing; and its attacks are more dreaded than those of almost any other.

The most prominent symptom is the difficult breathing, or *dyspnœa*; and yet dyspnœa may attend other diseases, as bronchitis, laryngitis, affections of the heart, etc., so that this symptom is not in itself a certain evidence that the difficulty is really asthmatic. This disease is of two varieties—the *spasmodic* and *humoral*, or *dry* and *moist*. Moist asthma is generally associated with inflammation of the bronchial tubes and thickening of the membranes. It is this *thickening* that obstructs the passage of air and causes the difficulty of breathing. In spasmodic or true asthma, on the other hand, the real difficulty is in *spasm* of the bronchial tubes, which in the same way obstructs the breathing.

The symptoms preceding an attack of asthma in many cases are, loss of appetite, flatulence, languor, irritability, drowsiness, oppression, and chilliness. If the patient has suffered under previous attacks of the disease, these symptoms constitute the well-understood warnings of what is approaching. In other cases there are no premonitory indications, and the disease sets in suddenly.

The paroxysms are very apt to come on in the night, often during sleep. The patient wakes with a sense of tightness about the chest, and a feeling of inability to expand it. He is obliged to rise, and sits up—often leaning forward and with the knees drawn up, laboring for breath, and making a wheezing noise which may be heard to a considerable distance. He experiences a strong desire for fresh air, and sometimes hurrying to an open door or window, may sit in a draft of cold air for hours with impunity. The face is apt to be haggard, the nostrils dilated, the mouth often opened in the act of gasping for breath, and the whole picture is one of the greatest distress.

During the paroxysm there is every evidence that, notwithstanding

ing the powerful exertions of the patient, the supply of air to the lungs is very much diminished. The surface becomes of a purplish hue, showing that the blood is not properly purified of carbon, and the hands and feet are cold.

There is a condition of the lungs often found associated with asthma, in which many of the air-cells become very much enlarged, sometimes by the opening up of several of them into one cavity; and in this manner open spaces are formed in the substance of the lung, varying from the size of a pea to that of a large acorn, and sometimes even larger. This condition of the lungs is known as *emphysema*; and it is obvious that where it exists in any great degree, the entire cure of asthma is hopeless. Indeed, this enlargement of the air-cells is often produced by the patient's straining efforts for breath during an attack of asthma, and yet, when once produced, it becomes a cause of succeeding paroxysms.

There can be little doubt that asthma is often a hereditary disease. In view of its severity, it brings but one consolation to the sufferer, and that is that where its attacks are often repeated, it constitutes almost a certain preventive of consumption. Few, if any, cases are on record in which consumption has appeared in a person who has suffered from genuine and continued asthma. Thus, although the want of purification of the blood must tend strongly to the production of tubercles, the excessive exertion of the lungs in breathing seems to forbid the deposit of the tuberculous matter in those organs. Nor does asthma itself generally prove fatal at an early period, but rather continues its attacks, at longer or shorter intervals, for many years; although, if not relieved, it sooner or later results in death, either during the paroxysm, or from exhalation, or during the interval.

The exciting causes of asthma are in most cases to be found in a fit of indigestion, in particular states of the air, or in some unexplained conditions of the nervous system. In some persons, breathing the vapors arising from new hay produces an attack of this disease, which is hence called "hay asthma." The inhalation of certain powders, as that of ipecac, etc., often produces an attack. In some, the smoky air of towns has the same effect, while others are made asthmatic by breathing the fresh air of the country. Some

find the disease to be excited by the keen atmosphere of mountains; others by the damp air of valleys. Certain emotions, as mental depression, fear, etc., have the power to produce a paroxysm.

No disease shows the beneficial effects of the inhalation of cold-medicated vapors more speedily or more satisfactorily than does asthma, the vapors employed being different for the *dry* and *humoral* forms. In the paroxysm, immediate relief is in almost all cases produced by this means; and this result is in the highest degree gratifying, even in a disease in which a complete and radical cure is seldom to be obtained by any remedy yet known to the profession of medicine. The real cause, or rather the actual morbid condition of the system which results in asthma, is not yet understood; and it is of course not reasonable to suppose that any remedy can be found which shall perfectly cure an *unknown* diseased condition. Most of the palliatives tried against this disease have failed not less completely than the pretended curatives that have been employed to eradicate it. Medicated inhalation at least affords prompt and decided relief; and thus it offers, as yet, the only hope of the afflicted.

In connection with this treatment, great attention should be paid to regularity in habits; and the diet, although supporting, should never be of a gross, exciting, or oppressive nature.

There are many other diseases occasionally or frequently affecting the lungs, of which from the fact that they fall more properly under the immediate care of the general practitioner, it is not my purpose here to speak. Such are pneumonia, pleurisy, hydrothorax, congestion of the lungs, cancer, gangrene, etc. For the symptoms and course of these diseases the reader is referred to the larger standard works of medicine.

I have thus passed in review those diseases of the lungs to the cure of which the inhalation of medicated vapors is especially adapted; and they are, most of them at least, diseases which are very common in all temperate latitudes, and from which, unless relieved by appropriate treatment, result an immense amount of suffering, and an untold sum of premature mortality. The facts I have stated are such as convey information upon needful points to the afflicted, point out the too often unheeded danger of delay, and

indicate the course to be pursued in order to secure returning health. Those things which the patient must do for himself I have plainly stated and earnestly enforced; those which he can not do for himself I have not attempted to burden his memory with, but have given him to understand that the remedies are such as must be administered by a physician, while I have cautioned him no less faithfully against the delusion, that wasting chronic diseases can be cured by irritating drugs, or that difficulty of the breathing organs can be relieved by introducing powders, pills, and mixtures into the stomach.

The Hygienic Management of Consumption.

It will not be necessary that I should state at great length the hygienic measures to be adopted in connection with suitable medication to the diseased organs, for the arrest of the progress of consumption, nor that I should dwell long on the measures of preventing the inroads of this disease in the case of those who are liable to its attacks. If the causes leading to this disease are clearly understood, its prevention becomes in most cases easy; for if those causes are strictly avoided, the effect (consumption) can not follow.

Let the reader who is interested in learning how to *prevent* this fearful disease turn back and read again, carefully, all that has been said under the head of the "Causes of Consumption," and especially what occurs under "Hereditary Consumption," in regard to *overcoming the predisposition* to the disease. He who has learned the sources of evil must shun them. This is the best advice the physician is able to give.

For the prevention or the cure of consumption, *medication* of any kind is not the sole reliance of my system of treatment; and it should never be the sole dependence of the invalid. Especially, before disease has manifested itself in the lungs, *hygiene*—a proper regulation of the habits of life—must be thoroughly understood and strictly practiced.

Let those who are consumptively inclined, or who have tubercles already deposited in the lungs, above all things eschew a *professional life*, or any other pursuit which will entail on them sedentary habits and a round of daily anxieties, such as must wear out and destroy the vital powers and invite disease. Let such avoid spending their time within doors, and rather go into some active pursuit, such as agricultural labor, hunting, or engineering. For men, if not tied by family cares to the narrow limits of a neighborhood, no better course can be recommended than "a life on the ocean wave," or a hunting, exploring, or scientific expedition into some wild and rugged section of country, where exposures are unavoidable, and where, with the purest air and the necessity of exertion, a healthy appetite is sure to be developed, which, in turn, should be freely indulged on the substantial food furnished by wild game, and improved by the addition of the best brandy or wine.

Females, under like circumstances, should follow in substance the same course. They should avoid in-door seclusion, crowded assemblies, and every thing like a sedentary, inactive life, or that necessitates the breathing of confined and impure air. The cultivation of a flower-garden, travel, or an interest in some benevolent enterprise which requires much walking, as in visiting from house to house, may be especially recommended to them. Their dress, as with all consumptives, should always be *warm enough* to protect them from inclemency or changes of the weather; but it should never be tight, and should especially allow free play to the chest. "Eat, drink, and be merry"—the wisdom of Solomon is the true wisdom of the consumptive invalid. Horseback riding, or riding in a carriage over rough roads, are recommended for both sexes; and all active exercises, such as wrestling, fencing, cricket, and calisthenics, are very excellent for the one or the other. In fact, I believe that if our sedentary, straight-laced, and slow-paced ladies would but *steal* from the rougher sex some of the games and sports which the latter now appropriate to their private use, they would gain vastly in health and soundness of constitution, and lose nothing in morals, manners, or refinement of taste.

In truth, the actual necessities of life and health are very *few and simple*, and they can be stated in a few words:

Air.—The first act of the infant is to *breathe*. Not a minute of life passes but that we breathe. Breathing, then, is a necessity of life; and is it a matter of no account *what* we take into the lungs, when we must so incessantly take something into them? By no means. The only material proper for breathing is the pure, unconfined atmosphere, just as it comes from the hand of the Creator, and just as we may find it on the hill-side and in the forest. Such air the young lions and tigers breathe, and they have never been known to die of consumption. Such air every human being must breathe, or else inhale a slow and certain poison.

Food.—Under this term I include water as well as solid aliment—every thing, in fact, that is necessary to construct a perfect human body, and to keep all its functions in harmonious and complete operation. For the accomplishment of these purposes, it is very evident that our food should not be changed too much from its natural condition. If we attempted to compound an atmosphere for our own use, I fear we should make but a sorry affair of it; and it is a pity our “professors” and teachers of the art of cookery have not yet learned that they make out no better in their unnatural efforts to improve upon the food which the bountiful earth furnishes ready, save the act of cooking, for our use. Besides, we should take food of all the kinds necessary to keep the human machinery in operation, respiratory or carbonaceous, as well as nutritious; liquid, as well as solid; animal, as well as vegetable.

Exercise.—Without action, no part of the human system can retain a healthy state. The child, with an all-absorbing love of active sports, plays “from morn to dewy eve,” until tired nature calls for repose, and all for the express purpose of developing his muscular, nervous, and bony tissues. Those who best retain the soundness and perfection of their constitutions, keep this habit of activity and sportiveness through life. But too many wholly lay aside this active life, and confine themselves to offices and in-door employments, forgetting that *in action alone there is health*; and the consequences of their course are visible in the shriveled limbs and pallid faces that meet us everywhere. *Work* is the Heaven-

appointed law—exercise for all the powers of the mind and all the organs of the body—and no one may disregard this law but at his peril.

Proper shelter, suitable clothing, cleanliness, congenial society, and a salubrious climate complete the list of all that is essential to perfect health and the enjoyment of long life. When the conditions are so few and simple, and the rewards so great, who that is not already diseased will not take heed to these demands of nature? or who, now suffering under disease, will not consider how important these conditions, simple and easy as they are, must be to the recovery of health?

ON THE

Evils of the Use of Patent Nostrums.

THERE is no more unfortunate habit among the people of our country, than that of the constant use of *nostrums*, better known as *patent medicines*. It is doing no violence to the truth to say, that multitudes keep their systems drenched and saturated with some kind of foreign, and to them *unknown*, material, in form of Pill, Powder, Panacea, Salve, Syrup, or slop, and that, literally, “from the eradle to the grave.”

The infant is seized on the very threshold of life, and without reserve or merey its body is straightway made the receptacle of some outlandish mixture, dignified with the name of medicine, and recommended to the mother's ear by the enticing appellation of Elixir or Cordial. If she has lost sight of the teachings of her native good sense, or if a nurse has been employed who is ambitious to show her devotion to the welfare of her little charge, or if anywhere in the family or the neighborhood there exists one of those unfortunate specimens of “ancient maiden” who have long since let their wits go to seek after their good looks, the poor little lump of humanity is doomed! First, physic for a week, to get the system of the infant open and in action; then, paregoric, or Godfrey's cordial, *ad libitum*, to quiet every ache and pain and

symptom of restlessness that appears; to be followed by vermin-fuges, syrups, and mixtures, without end.

Let these wiseacres cease their torturing of human infants long enough to try an experiment which I shall recommend, and they may have their eyes opened, and perhaps to *staring distance*. Let them take the young of the flocks and herds, that have been heretofore allowed to drink in their first breath on the hill-side, and draw pure nutriment, unpoisoned by drugs, from the sources which nature has provided; let them treat them in the same manner as young children are now treated, and "put them through" the same course of benevolent medication to which the latter are subjected, and, my word for it, the *premature mortality* of "live stock" would soon call together an "indignation meeting" of the whole community, and probably lead to prompt legislative interference.

But it is not the infant alone whose system is poisoned and destroyed by "quack medicines." Those who live through the first few years of poisoning, continue to take nostrums, but now of a more advanced grade—Pectorals, Expectorants, Invigorators, Panaceas, Alteratives, Detergents, Deobstruents, and so on to the end of the catalogue. And this process goes on until old age, if the overdrugged, *often-cured* frame of the subject does not fall in pieces long before.

It is well known that our country affords the rankest soil in the world for the growth of this kind of quackery. Here the nostrum system first grew to such giant proportions as to call the attention of *speculators* in all parts of the world, and already it has been successfully transplanted into England, and most of the countries of Europe. If the people only knew the facts, they would find that there are thousands engaged in this business among us, filling the pages of newspapers, and disfiguring even fences and the pavements of our streets with their clamorous announcements; while, sorry as we are to say it, *very few of them ever render an EQUIVALENT for the sums they continue to draw from a too credulous community!*

The objections to these nostrums are many, and they ought to be too obvious to need mention. Their ingredients are *always unknown*; and hence to take them under any circumstances is only

to take "a leap in the dark," while, if they were known, they would be found to be mixtures of corrosive sublimate, iodine, or some other deadly poison, with water, bad molasses, and worse whisky! They always present the absurdity of a single remedy, previously compounded, and intended to be applied without discrimination to all cases that present themselves.

An almost countless number of these nostrums are being sold under different names as "cures" of consumption. To set the matter of their efficacy at rest, I wish simply to remind the reader that no real unquestionable instance of a cure wrought by them can be pointed out, I care not where the attempt is made; but, on the other hand, thousands of instances in which they have produced not the slightest benefit. And yet the newspapers of the day are burdened with accounts, magnified, distorted, or wholly "original" with those interested, and which purport to be statements of "miraculous cures," and proofs of the most inconceivable "virtues" in some of these ill-contrived batches of drugs. If *medicines*, when dispensed by the skillful physician have not succeeded in arresting consumption, it is certain that *patent nostrums*, sold promiscuously by speculators, have failed miserably to accomplish the end sought.

Even inhalation, since it has become known and widely adopted, has found its *empirical imitators*. Many of these have a single mixture for sale, which they deal out to all who will pay the stipulated price, thus violating every principle of reason and every precept of correct medical science or practice. And many of these men are known to be broken-down horse-doctors, or druggists who have exchanged their calling in the hope of sooner amassing a fortune. Such will soon be marked for their unblushing effrontery, and avoided by the sensible portion of the community.

Manifold and great are the evils of drugs, whether compounded by scheming empirics, or dispensed from the hands of ignorant and unskilled practitioners of medicine. And I submit it to the good sense of the candid and well-informed in the community, whether, compared with the evils of the excessive use of intoxicating drinks, the mischiefs created by the universal, and often unprincipled and injudicious employment of drug medicines, are not such as to call as loudly for a prohibitory drug law, as for one restraining the

undue employment of alcoholic beverages. Said Dr. James Johnson, in the London *Medico-Chirurgical Review*, "It is my conscientious conviction, founded on long experience and reflection, that if there were not a single *physician, surgeon, apothecary, man-midwife, chemist, druggist*, nor *drug* on the face of the earth, there would be *less sickness and less mortality* than now prevail!" Is not, I ask then, a law to *prohibit* this unnecessary and destructive use of drugs at once sanctioned by sound philosophy, and demanded by the interests of a suffering race?

Cases Reported.

It is my intention to give a report of the condition of patients, the treatment followed, and its results, in one or two cases under each of the more prominent diseases which have now been considered. It would be easy to fill the limits of this work with such reports from the records which I have kept of my practice; and this might be done, though I should confine myself to cases in which a cure or very great relief has been secured. But this would not be the most profitable sort of reading with which to fill a book upon these subjects; and I have chosen, therefore, to devote these pages chiefly to instruction in matters pertaining to health and disease; while the few instances here detailed are given rather as *illustrations*, than as a *history*, of what the true system of medical inhalation has accomplished. I claim that the theory which I have here explained, is the most rational and sensible that has yet been presented in regard to the nature and causes of consumption; and the treatment adopted for the cure of this disease has proved itself superior to any hitherto laid before the profession and the public.

Cases Treated in which Cavities evidently existed in the Lungs.—CASE I.—MR. CORNWALL, aged 32, book-keeper in Genin's Bazaar, No. 513 Broadway, New York.

This gentleman applied to me for medical treatment, March 20th, 1854. His general appearance was the most unfavorable that could be imagined. There was great emaciation, extreme pros-

tration, almost constant cough, profuse muco-purulent expectoration, night-sweats, loss of appetite, and every symptom of an advanced stage of phthisis. Upon physical examination of the chest, a well-formed cavity of considerable size was discovered under the right clavicle. There was also extensive tubercular deposit in the superior and middle lobes of the right lung. This gentleman had been examined by many of the first physicians of New York, who had all united in pronouncing him in the last stages of phthisis. I will add, that the disease in his case was not hereditary, having been acquired by too close confinement within doors, and upon a damp floor, resting upon the ground.

Since the commencement of his difficulty, which was nearly eighteen months previous, he had been subjected to the usual system of allopathic practice, by a very intelligent physician of this city, Dr. M. W. Gray. During three months previous to his coming under my care, he had taken upward of twenty bottles of "cod-liver-oil." Upon this he had evidently increased in weight and fat, but received no addition of strength, his appetite at the same time being nearly destroyed. He was also taking anodyne powders of morphine at night.

In this condition I subjected him to the following treatment. In the first place "cod-liver-oil" was laid aside, and the patient was forbidden to take any medicine into the stomach. He was put upon a course of inhalation, the vapors being changed as the nature of the symptoms seemed to indicate.

In connection with this course, I directed him to drink about four ounces of the best brandy daily, to adopt a nourishing and generous diet, to take all the exercise his strength would allow in the open air, and to have the whole body sponged over, morning and evening, with a mixture of equal parts of alcohol and water, rubbing the surface after the bath until thoroughly warmed. He was also directed to wear next to the chest a jacket of coarse crash, which was wet as often as it dried in equal parts of alcohol and water. Two objects are secured by this application, as it causes the patient to inhale constantly and slowly the vapor of alcohol, and also quiets pleuritic pains.

This course of treatment was strictly observed for two weeks,

without any alteration whatever. From its very commencement the improvement of the patient was so rapid as to exceed my most sanguine expectations. The cough and expectoration diminished, the appetite returned, night-sweats ceased, and, as the patient expressed it, he "felt better all over." From this time the amount of nitric acid was gradually diminished, and tannic acid substituted. The inhalations were varied from time to time, but the physical treatment remained the same, excepting a gradual increase in the amount of alcoholic stimulant used.

Oct. 1.—The patient has increased in weight nearly *twenty pounds*. At the present time, about six months from the commencement of treatment, he is able to attend to his usual business, from ten to twelve hours per day.

June 1st, 1855.—The gentleman's health continues remarkably good, taking into consideration his sedentary habits. He has lost no flesh during the winter, his appetite and digestion are good, he has but little cough, and scarcely any expectoration. On examination of his chest at this time, I find that a cavity still exists, allowing free ingress and egress of air; yet I can not detect the slightest indication of the presence of any secretion whatever. The exact condition of this cavity, or the appearance it would present, of course we can not know; but I have no doubt that an adventitious membrane has been formed lining its sides, contracting its size, and condensing the pulmonary tissues surrounding it. It can not be denied that the softening and breaking down of the lungs, which was rapidly going on at the time of commencing the treatment, *has been checked*; and whether this most favorable result was produced by the treatment instituted in the case, or whether by withdrawing all medicines from the stomach, I leave it to intelligent physicians to decide. I look upon this as a marked illustration of the efficacy of the mode of treatment I have adopted in arresting the progress of this most fatal disease, and as a convincing proof of the benefits to be derived in the treatment of it from the inhalation of nitric acid and alcoholic vapors.

CASE II.—WM. ROWORTH, aged 20; residence, 31 Division Street, New York.

This patient came under my care June 19th, 1854, his features

and general appearance indicating advanced phthisis. His expectoration was purulent in the highest degree, exceeding in quantity any thing which I have ever witnessed, before or since, with a most intolerable odor of sulphureted hydrogen. An immense cavity existed in the right lung, involving the middle and upper lobes. The left lung gave symptoms of the presence of tubercles, but not softened. The digestion was good. His previous treatment had been decidedly eclectic; as during two years he had tried almost every known mode of treatment.

This patient was required to make use of the same vapor as that given in the case previously detailed, but with the addition of tannic acid; and this was continued during ten minutes, and repeated four times daily. The jacket for the chest, and daily bathing, as in the previous case. Diet, exercise, and air, the same, with the use of from four to six ounces of brandy daily. No medicine was allowed by the stomach. After the lapse of a month, the proportion of nitric acid in the vapor was increased; and to correct the very disagreeable fetor of the expectoration, creosote was added.

The favorable effects of this treatment were marked, from the first. The cough was soon in a great degree relieved, and the expectoration rapidly diminished in quantity. The offensive odor of the *sputa* was wholly removed. The patient improved in appearance and in general comfort, and gained within a short time six pounds in weight. But recovery, in a case so far advanced, was hopeless; and he gradually failed at the last, and died in November following. Yet this case is one of much interest, as proving the power of the inhalation of cold medicated vapors in connection with suitable hygienic remedies, withholding all medicines from the stomach, *to arrest the progress of cavities in the lungs*, in a case of advanced phthisis, and in which the powers of the system were rapidly failing. Thus, where cure is impossible, this system affords the most valuable relief.

Cases of Chronic Bronchitis.—CASE I.—A. W. CAMPBELL, aged 69; residence, Hackensack, N. J.

Mr. C. came under my treatment Oct. 13th, 1854. He had

been suffering from chronic inflammation of the throat and air-passages for the past ten years. His system was much debilitated, and in part from loss of appetite induced by the great amount of medicines he had taken. He had night-sweats, harassing cough, profuse expectoration, and all the symptoms of the last stages of bronchitis.

I placed him upon the use of the following compound, in the way of inhalation : Deodorized alcohol, $\frac{3}{4}$ vi.; nitric acid, 3 ss.; to which were added tolu, camphor, oil of bitter almonds, and tannic acid. Alcoholic stimulus was given freely, and the surface sponged in dilute alcohol once a day. The use of the vapor was continued, with occasional changes, to meet the symptoms arising, for one month; at the end of which time there was much less expectoration, no night-sweats, and, in all respects, the patient was decidedly better.

Since that time he has used the same vapor, containing, however, less of the nitric and tannic acids. This has been inhaled from time to time, up to this date, and with continued improvement. Mr. C. now enjoys tolerably good health, and, for a man of his age, is quite comfortable.

CASE II.—N. HOUGHTON, Esq., aged 63; residence, Avon Springs, New York.

This was a case of bronchitis of twenty years' standing. Came under my care November 3d, 1854. This case was a marked one, on account of excessive expectoration, night-sweats, and debility.

The patient was required not to take any more medicines into the stomach. He was placed upon the same vapor as that given in CASE I. At the end of two weeks he had decidedly improved in strength; expectoration and night-sweats had entirely ceased, and the cough was much less harassing. At the end of two months this patient had so nearly recovered as to be about, and quite comfortable. He is now enjoying as good health as one at his age could expect.

It should have been remarked that, in both these cases, the patient was put upon the use of Jamaica rum and milk, drinking it four or five times a day; and in all cases of bronchitis, in patients at this age, I prefer Jamaica rum to any other form of alcoholic stimulus.

Case of Chronic Catarrh.—Mr. H. M. McKenzie, a well-known merchant of Charleston, S. C., applied for treatment Feb. 7th, 1855. This was a very severe case of catarrh, although the patient had been treated by various physicians for tubercular consumption. His cough was extremely hard and racking, but was really caused by the dropping of muco-pus from the posterior nares upon the epiglottis. One nostril was completely closed. The patient was under treatment by me during three months—the nares being showered every other day, by the use of the syringe shown in fig. 7. The liquid at first used was nitric acid; but in this case reliance was especially placed on frequent changes from the caustic application already named, to the nitrate of silver, acetate of zinc, tannic acid, etc.

When this patient left, the cough and discharge had nearly ceased, and he suffered very little in any way from the disease. He left for home after three months, but continued the use of the syringe as before. His general health was now quite restored.

This case is merely given as a sample of the results which have been witnessed after similar treatment, in a great number of cases. In this difficulty the nasal showering syringe acts very finely—the liquid being readily injected into the posterior nares from the mouth, and allowed to escape anteriorly.

Opinions of Physicians and Others

RESPECTING THE MERITS OF INHALATION BY THE USE OF COLD, MEDICATED VAPORS, AND OF THE GENERAL PLAN OF TREATMENT RECOMMENDED IN THIS WORK.

WHILE pursuing my investigations in respect to the nature and cure of diseases of the lungs, and applying to the relief of the suffering the principles which I have discussed in these pages, I have been encouraged by the reception of many letters from my medical brethren, which breathe a spirit of fraternal interest, and express a cheering confidence in the value of the system of inhalation and general treatment originated by myself, while they furnish marked

instances in proof of its success. Much as I would wish to extend the list, my space will permit the publication of but a few of these, or rather of brief extracts only from a few of them; and these the reader will find below.

The principles of the treatment here laid down are believed to be so clear in themselves, and so in accordance with reason and common sense, that no such corroborative evidence as that contained in these letters is really required. Yet they are possessed of much value, if for no other cause than this—that they afford another means of refuting the calumny, that the medical profession is always averse to progress, and the equally false supposition that doctors seldom fail to “disagree,” even on the most vital points in their science and practice; and hence the publication of these letters here furnishes testimony, not only to the value of the system which they approve, but to their own liberality of sentiment.

WEST LIBERTY, O., Oct. 17th, 1855.

DR. SANBORN:

Dear Sir—I acknowledge the receipt of your letter of October 11th, soliciting my opinion in regard to “Medicated Inhalation in Phthisis Pulmonalis.” Your method of *cold* inhalation is entirely new to me, and in my opinion it is the only correct plan the profession have yet arrived at. As you justly say in your brief but valuable treatise, the profession has tried every conceivable form of medicines by the stomach; and that in every attempt they have utterly failed, is an undeniable fact.

I have been so highly pleased with the perusal of your meritorious essay, that I intend to treat all such diseases as you have named according to your plan, as soon as I can obtain the necessary apparatus for so doing. Wishing you all success in your worthy undertaking, I have the honor to subscribe myself,

Yours truly,

J. C. TAYLOR, M.D.

CAZENOVIA, N. Y., Oct. 29th, 1855.

G. D. SANBORN, M.D. :

Dear Sir—In reply to your inquiry, asking my opinion in relation to the use of Medicated Inhalation, I most cheerfully answer

that I have been for the last two years in almost constant use of the medicated vapors, both warm and cold, and from positive knowledge I can say that in the treatment of lung and throat diseases there are no agents so well calculated to effect a sure relief and positive cure as the medicated vapors recommended and used by yourself.

As regards their use in my own practice, I must say that they far exceed my most sanguine expectations, and in their influence for good are direct and positive. By their use I have cured, and am still curing, many cases of tubercular deposit, bleeding from the lungs, bronchitis, and other cases of disease which have been pronounced by eminent physicians as incurable.

* * * * *

In conclusion, I can but express the wish that you may continue eminently successful in your application of medicated inhalation, and thus confer upon suffering humanity the greatest of blessings, namely, *health*.

Yours truly,

T. L. HARRIS, M.D.

TROY, N. Y., Sept. 29th, 1855.

DR. SANBORN:

Dear Sir—I am afflicted with a very troublesome complaint which my physician calls “spasmodic asthma.” Satisfied of the propriety of applying a remedy to the parts affected, I called one day in February last on *Dr. H—r*, of 828 Broadway, and put myself under a course of his treatment, which I followed closely for a period of two or three months, and thought at the time that I was really benefited by it. Subsequent and more violent attacks have, however, convinced me that the disease still exists in all its strength, and that the fifty dollars which I paid to *Dr. H.* might better have been given to the poor. * * * *

Dr. H. could not, or did not, give me any thing to relieve me when the spasm was on (which, by the way, I could not help thinking was a little singular), but encouraged me with the hope that those spasms would become less frequent and violent. I am sorry to add, both for my own comfort and *Dr. H.*’s reputation, that *I am not one whit better* for all the pains I have taken with his medicine. * *

Will you be good enough to define your mode of treatment, and that at your earliest convenience, thereby obliging,

Yours truly,

GEO. BABCOCK.

BLACKWOODSTOWN, N. J., Oct. 19th, 1855.

G. D. SANBORN, M.D.:

Respected Sir—A friend lately forwarded me your address to the medical profession upon the subject of inhalation. The gentlemanly and explicit manner in which you have treated this subject, as well as the specialty itself, merit the highest praise. I shall have occasion to address you again soon, detailing the symptoms of invalids whom I have advised to commit themselves to your care. * * * * I have an earnest desire to acquaint myself further with the minute applications of the new treatment of which you may justly be styled the *founder*.

Your very obedient servant,

F. R. GRAHAM, M.D.

FREDERICKSBURG, VA., Oct. 27th, 1855.

G. D. SANBORN, M.D.:

Dear Sir—According to your request, and my own inclination, I write to inform you of the effect of your treatment upon my lung disease, and which I have adhered to strictly since I called upon you, on the 2d inst., as far as circumstances would permit.

I have drank daily from four to six ounces of gin; bathed twice daily in diluted alcohol; slept at night in a wrapper wet with dilute alcohol, and used for two weeks the expectorant vapor which you gave me. About ten days ago I had the misfortune to break the bottle containing the expectorant vapor. Since that time I have been using some preparations of alcohol, nitric acid, and camphor, which, however, do not answer the purpose, or supply the place of the medicine you gave me. My general health is improving, my cough and expectoration less (although the cough is sufficiently harassing for any man), but the character of the expectoration is decidedly improved. My appetite is good.

Along with such medicines as you think my case requires, please

give me such counsel as you may think of service to me, and in connection therewith your bill, which shall be duly honored.

Respectfully yours,

GEO. W. STOCKING, M.D.

CORFU, N. Y., Nov. 3d, 1855.

G. D. SANBORN, M.D. :

Dear Sir—Yours of the 10th ult. is before me. Absence from home and a pressure of ministerial labors have precluded an earlier reply.

Convinced of having received personal benefit, under God, from your treatment and regimen, and of the admirable excellences of your medical compounds and method of inhalation, and of the justness of your claims as to the invention, discovery, and demonstrative efficacy of the same for the purposes intended, it affords me, sir, great pleasure to say that I regard your remedies and the method of inhaling them as eminently *scientific, practical, safe, pleasant, and efficacious* in the treatment of lung and throat diseases; and I would preferably commend the same to those suffering under such complaints.

Truly yours, etc.,

WILLIAM FITHIAN.

PROVIDENCE, R. I., Oct. 30, 1855.

DR. SANBORN :

Dear Sir—As you very kindly offer to furnish your pamphlet on application, I take the liberty of asking you for a copy. Having, to some extent, tried inhalation, and becoming satisfied that the *cold inhalation* is every way preferable to that by hot water, I would be obliged to you if you will forward to me the price, per dozen, of your inhalers. Your early attention to this will oblige,

Yours truly,

C. G. McKNIGHT, M.D.

MILLEDGEVILLE, GEO., Oct. 24th, 1855.

DR. G. D. SANBORN :

Sir—I have read a series of letters written by you on Inhalation, and also the letters published by Drs. F—h and H—r. Your views strike me forcibly, and I am impressed with the idea that your plan of treatment is the best. Please send me the pamphlet

which you have announced, as I wish to inform myself more carefully in regard to the use of the cold, medicated vapors.

I am, sir, yours most respectfully,

S. RUSSELL, M.D.

BURNS' DEPOT, ALLEGHANY CO., N. Y., Nov. 4, 1855.

DR. SANBORN:

Dear Sir—I take pleasure in complying with your request. I consider the mode of treatment by inhalation as the only way of treating consumption with any kind of philosophy or reason, or with any hope of success. This method carries the medicine straight to the seat of the disease. I *now* would as soon treat a burn by giving medicine by the mouth, as I would consumption in any of its forms; for I have tried medicine to perfection on myself in the form of syrups, solutions, and the different alteratives, such as mercury, iodine, and iodide of potassium, with the addition of epispastics, but all to no purpose, for I continued to go down until I could see in at Death's door. Then I left off all kinds of medicine, and tried the inhaling mode, and in two months I was able to resume my practice as usual. All I used in the jar or tubes was some thirty grains of gum myrrh, say about twenty grains iodide of potassium, and ten grains of nitrate of silver in half a pint of fluid. When I first used the apparatus I put the tubes in hot water, and then used the vapor in a hot state. But after reading your views in the *Tribune*, I used it without heat, and it is the best way by far. I have treated a number of cases of consumption, and some of them severe cases, with hemorrhage from the lungs, by your method, and they now enjoy good health. One, in particular, has since labored by the month for two years without a return of the cough. If it is your wish, I will forward to you the different cases I have treated in this form, with one severe case of spasmodic asthma. I have not yet received a pamphlet from you, and I wish you would forward another to me, if you please. I would have written sooner had not sickness prevented. I wish you success in your course in curing disease,

Respectfully yours,

A. G. PRIOR, M.D.

MONTREAL, C. E., Oct. 6th, 1855.

DR. SANBORN:

Dear Sir—Will you be so kind as to forward to me your treatise on Inhalation. I have become much interested in your method of applying remedies, and I shall hope to meet with the same success in adopting cold, medicated inhalation, as that which has crowned your labors.

Truly yours,

H. CHAPMAN, M.D.

DELPHI, O., Sept. 27, 1855.

DR. SANBORN:

Dear Sir—I consider your Theory of Consumption, being primarily a local disease, the most reasonable one ever published, and it agrees with my views exactly. Your system of "Cold, Medicated Inhalation," by adding the various remedies to pure alcohol, and breathing them at the natural temperature of the air, is certainly a new system of practice, and unknown heretofore, as far as I am acquainted, to the profession. I can see no reason why the remedies you use, which you have given to physicians throughout the country, are not scientifically selected, and I confidently believe that your theory and practice will be generally adopted. It differs so materially from the old hot-water plan of medicated inhalation that it must attract the attention of the public; and physicians, I have no doubt, will give it a thorough investigation.

Yours, etc.,

S. H. PEARSE, M.D.

MOUNT BLANCHARD, HANCOCK Co., O., July 15, 1855.

DR. SANBORN:

Dear Sir—I noticed in the New York *Weekly Tribune* of July 7, your letter on the treatment of diseases of the lungs and throat by inhalation of cold, medicated vapors. Now this I look upon as a decided improvement in the treatment by inhalation, as it can be administered in every situation and under all circumstances. Whoever makes one step of improvement in the treatment of this hitherto incurable class of diseases may well be considered as a benefactor to the world. As you have the kindness to offer your

discovery to the medical world, I wish to avail myself of its advantages.

Yours most respectfully,

SAMUEL S. CLARK, M.D.

SHERWOODS, P. O., CAYUGA Co., N. Y., Nov. 8th, 1855.

DR. G. D. SANBORN :

Dear Sir—I have read many letters of yours, as well as H—r's and F—h's, published in the New York *Dispatch*, on Medical Inhalation, and I have examined them all, and become satisfied that your mode of inhalation and your medicines for the same are far better than those of any others. So far as I could learn of them they are no quack's compositions. As to the remedies of H—r, I think but little of them, although they may be good in some cases. F—h, of New York, I consider a *perfect quack*; he has cheated the people out of a great amount of money by selling his nostrums at enormous prices. I am knowing of several cases of consumption where his poisonous medicines have helped the patient out of existence, and, therefore, I have no kind of confidence in him. I am desirous of informing myself more upon this subject, and I see by the *Dispatch* of the 4th inst., that you offer to send to physicians a copy of your pamphlet containing your mode of treatment and the names of the medicines used. I think this very liberal in you, and, besides, it shows to the world that your practice is no imposition or speculation on your part. I must say that no reasonable man can condemn your course, and I trust it will be a source of great profit to you in the end. I am one who is willing to build up your system. As I have not seen your valuable pamphlet, I am desirous of obtaining a copy, for which I am willing to compensate you. Will you be so kind as to send it to me by return mail. I have talked with a friend who says your work is good and worthy of the notice of physicians; therefore my anxiety concerning it.

I am, dear sir, with respect,

G. A. THOMAS, M.D.

In addition to the foregoing letters, I might publish many others containing testimony to the originality, efficacy, and success of my mode of inhalation, equally as decided, plain, and satisfactory as

that contained in these. Such a course is not necessary. The judgment of an enlightened profession and public is here sufficiently indicated; and farther evidence would be superfluous.

I will, however, add in this place a letter, as a sample of a *challenge* to those who practice the old systems of inhalation in this city, and to which, although repeated in a variety of forms, and on many occasions, I have not been able to induce the physicians, to whom reference is made, to reply. Venturing the opinion that it must be a poor cause that will not bear advocating, I subjoin the letter, and leave the reader to draw his own conclusions.

DR. SANBORN ON COLD, MEDICATED VAPORS.

PHYSICIANS' OPINIONS—CONTINUED.

TO THE EDITOR OF THE NEW YORK DAILY TIMES:

Sir—I have frequently expressed, through your columns, a desire to have my system of Medicated Inhalation thoroughly tested by physicians, that the public might be enabled to judge whether it is of practical value in the treatment of lung diseases. I have presented to them the remedies I use, and their method of use, and have explained the objects which I expect to accomplish by their employment. No physician has accused me of secrecy, and no one can, in regard to the system of inhalation which I practice, and which I claim to be entirely distinct in every feature from the old hot-water plan, which is well known to the profession.

All I ask now is, that others, who practice the last-named method of inhalation in this city, shall do as I have done, and let physicians and the public know what they use, and why. It is a familiar adage, that "Any subject which will not bear investigation is founded in deception and falsehood."

I continue to-day the opinions of physicians regarding the merits of Medicated Inhalation as conducted with really new and valuable agents, and in the form of cold, and not hot and stifling vapors.

Yours, etc.,

G. D. SANBORN, M.D.

To the many who have not studied the science of medicine, and who are liable when they approach medical subjects to be overwhelmed with a mass of learned wordiness, or to be deceived by

plausible but fallacious theories, let me say before bidding adieu to the readers of this volume, look back over these pages and judge whether the knowledge here intended to be conveyed is veiled from your view by a pretentious web of technicalities, or whether the folds of false argumentation are woven about the uncautious judgment of the reader, like the coils of the terrible boa about the body of its victim. Question these pages again, and let them answer to your judgment, whether the facts here laid down are not as represented, and whether the reasoning based on them is not simple, clear, direct, and incontrovertible.

The theory of consumption detailed in this work is believed to be as *lucid* and *valuable*, as it is *undoubtedly new*. The summary of the causes and symptoms of consumption has cost much labor and pains-taking; but nothing less could have been made to answer the obvious needs of a large portion of the community, who are, or may be, the subjects of this dreaded complaint. The treatment here given is not of a hidden and obscure, or burdensome and impracticable character. My object in detailing it has been to tell the patient and the friends of the invalid what they must and can do on their own part. The inhalation of remedies into diseased lungs is a point of too much delicacy and importance to be trusted to the judgment of the medically uneducated. Had I given the formula for the vapors to be inhaled in a single instance, or in several, it would not have availed; for the remedies laid down would, probably, have to be changed to adapt them to the next case that presented itself, and no one but the physician who has studied the operations and susceptibilities of the different organs of the system, and the effects of various remedial agencies upon their action in states of health and disease, could with safety undertake to change the nature or proportions of the ingredients of the vapors to be employed.

Instruction has been my leading object. But there are fields of knowledge in which it is every way true that "*a little learning is a dangerous thing*;" and this is more the fact in regard to medicine, where *human life* is often staked on the issue of an hour, than in any other pursuit. I repeat it distinctly, then, I have not given recipes for preparing the medicated vapors which are to be used,

because in the hands of the community at large such recipes could not but prove impracticable, and often mischievous. But the remedies which Nature holds out to every one diseased, I have dwelt on earnestly and at great length. Let the invalid but learn and live up to what has been said on these points, and he may reap rewards that will call for perpetual gratitude to one who has aimed to be to him a faithful monitor, and perpetual thankfulness for the triumph of his own resolution.

The treatment which I employ for the cure of tubercular consumption has been fully detailed to the medical profession of this country, and from very many I have received in reply their opinions of its merits and success. Some of their letters have been laid before the reader; and the emphatic adoption and support which they publicly give to the theory and practice set forth by me, may be best appreciated by a statement of the fact that very many, outside of as well as among the number of those who have written me, have applied the system in their own practice, and learned its value by witnessing its beneficial effects upon the invalid within the range of their own daily duties.

How strong the contrast, allow me to suggest, between such a system of treatment as I have now laid before you, which has been openly published, impartially scrutinized, cheerfully recommended, and, moreover, attested by its fruits, and those off-shoots of the most barefaced quackery which are heralded through the land, and the medicines of which are even *peddled from door to door*, in the shape of nostrums that are concocted in secret, their ingredients unknown to the user, and above all else absurd, from the fact that one, two, or three such compounds are dealt out to all purchasers at so much a bottle, without regard to the nature, stage, or character of the disease, or the age, strength, or habits of the patient.

But besides cautioning the reader against these transparent deceptions, I shall do him a kindness to put him on his guard concerning those systems of inhalation which either follow the same quackish course with a single bottle of some secret mixture, or which are nothing but a revival of the old plan of hot-water inhalation which was practiced by English physicians of the last century, until it was absolutely abandoned for its worthlessness.

There are even now lengthy and flaming advertisements of such a medical humbug circulating through the length and breadth of our country, whose foreign advocate has not imported with himself, nor originated one new or useful improvement either in remedies or in the method of using them, and who stands, therefore, publicly condemned as a plagiarist and impostor. Others make a great ado about "combining inhalation" with medicines which, when the truth is known, will be found to neutralize and destroy every good effect which the remedies inhaled might produce.

It is fortunate that this is a day when medical truth is not only progressing, but becoming popularized and diffused among the people. No man is pardonable, in this day of light and knowledge, who submits to be duped by such false and groundless representations. Let every man examine whatever, in the way of medical treatment, is proposed for his acceptance, and especially if he expects to take it as the anchor on which to moor his hopes of health, life, and happiness. "*Prove all things*; hold fast that which is good." Save yourselves from contributing to fatten the impostures of the day. Learn that in obedience to Nature, and in simple, natural remedies is the only sure reliance of the afflicted; and above all, that prevention is almost always possible, and always far more agreeable than the pains of disease, and the hazards that encompass the struggle after its cure!

CONCLUSION.

The duty of writing a plain and readable book for the enlightenment of the public, has long impressed itself upon my mind, but the labors and anxieties of an arduous professional life have, until the present, forbidden its accomplishment.

The success which I have met with in my treatment of consumption has given me incontestible proofs of its value, and has served to sustain me in my labors. And it is with gratification and a just pride that I now announce to the world my views, as herein set forth, and with a trust that the evidences of their worth here presented will rekindle hope in many an abode of gloom, and cause rejoicing where fear alone has long reigned.

In writing this book I have been actuated by two important motives—a desire of extending a knowledge of the theory it sets forth, and also the wish to be instrumental in remedying disease. I must leave the fruits of my labors in the hands of a discriminating public. “What I have written, is written; would it were worthier!” I hope that those who read will do so with an impartial judgment and an unbiased mind. Weighing well the arguments set forth, and examining the evidences adduced, let each determine for himself, whether the premises on which I have built do not afford a sure and firm foundation, and one that is impregnable to all hostile attacks.

To those members of the profession who have kindly aided me by their co-operation, I return the thanks and acknowledgment due to their liberal course. With such feelings I finish my task, yet not without regret that haste has unavoidably left in it some errors which time might have corrected.

To the Reader: Let me inquire, what is your duty to those suffering from that terrible malady, consumption? You have presented to you the certain means of relief—the most promising means of a cure. Thousands are now suffering from this disease—thousands hurrying away from the living world into the land of shadows—thousands praying for relief, and hitherto vainly calling for aid, while no aid was at hand! A thousand vivid pictures might be drawn of the course of the Arch Destroyer; but I will not claim your sympathies. I appeal to your sense of justice in view of the fact that the Nineteenth Century has at length unfolded a means whereby *consumption can be cured!*





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